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ABSTRACT

The Architecture Study Planning Group (ASPG) makes 62 recommendations for architecture education in Ontario's universities. Based on these recommendations, the Council of Ontario Universities makes several observations about the state of the discipline: that (1) architecture programs are basically sound, but would benefit from greater coordination; (2) enrollment growth be gradual; (3) graduate studies should be developed, but with caution; (4) the existing diversity of programs is desirable; (5) cooperative planning should be encouraged; and (6) there is need to clarify the roles of the universities and the profession in the preparation of architects. Specific recommendations are either accepted, referred to individual universities and study groups, or rejected. Contents include the full report of the ASPG, university comments on the report, supplementary comments of the ASPG, comments by the Ontario Council on Graduate Studies, and the response of the Ontario Association of Architects. (MSE)

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ED132892

Commoditie, Firmenes, and Delight.

A STUDY OF ARCHITECTURAL EDUCATION IN ONTARIO

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

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Council of Ontario Universities
Conseil des Universités de l'Ontario
130 St. George Street, Suite 8039
Toronto, Ontario

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"The science of the architect depends upon many disciplines and various apprenticeships. . . .Architects who without culture aim at manual skill cannot gain a prestige corresponding to their labours, while those who trust to theory and literature obviously follow a shadow and not reality. But those who have mastered both, like men equipped in full armour, soon acquire influence and attain their purpose."

Marcus Vitruvius Pollio
Ten Books on Architecture
(1st Cent. B.C.)

"In Architecture as in all other Operative Arts, the end must direct the Operation. The end is to build well. Well building hath three Conditions. Commoditie, Firmenes and Delight."

Sir Henry Wotton
The Elements of Architecture
(1624)

"The new paradigm begins by shifting its focal point from well-designed buildings to man-oriented environments."

John P. Eberhard
A New Paradigm for Architecture
(1969)

"The three basic characteristics of any work of architecture. . . 'commodity, firmness and delight'. . .can be related (broadly!) to the social sciences, the physical sciences, and the arts."

Guy Desbarats
Consultant's Report to COU
(1975)

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Preface

In June, 1974, the Council of Ontario Universities approved the establishment of an Architecture Study Planning Group to make recommendations concerning the orderly development of architecture education in Ontario. This came in response to a proposal from the Ontario Association of Schools and Departments of Architecture requesting that such a committee produce a plan for the study of architecture which would coordinate the objectives of the different interest groups into a single unified and rationale plan.

The Report of the Architecture Study Planning Group (ASPG) was completed in August, 1975, and formally received by COU at the September, 1975 meeting. Bound copies of the Report were distributed to all interested groups and comments were solicited from the institutions offering programmes in architecture and the Ontario Association of Architects. The Ontario Council on Graduate Studies was asked to comment on the Report of the ASPG with respect to its implications for graduate studies. Once comments from the universities were received, the ASPG was asked to draft a response.

At the 115th meeting in June, 1976, COU conducted its final review of all relevant documents from the standpoint of system planning. Its recommendations are contained in the section of this publication entitled "Recommendations of the Council of Ontario Universities Concerning Architecture Education in Ontario".

I

RECOMMENDATIONS OF THE COUNCIL OF ONTARIO UNIVERSITIES CONCERNING ARCHITECTURAL EDUCATION IN ONTARIO

Council of Ontario Universities
Conseil des Universités de l'Ontario

Recommendations Concerning Architectural Education in Ontario

At the 115th meeting on June 3, 1976, COU agreed to take action on the Study of Architecture Education as follows:

General observations

Based on the report of the ASPG, together with the consultants' reports, the following general observations about the state of architecture education in Ontario can be made:

1. There is an array of basically sound architecture programmes in the province, but all would benefit from strengthening of the academic resource base and consolidation. There should be provision for monitoring to see that this occurs.

2. Enrolment growth should be gradual, as the necessary strengthening occurs.

3. Graduate studies should be developed, but at a cautious pace related to the strength of the programmes.

4. The existing diversity of educational approaches should be maintained, but with some common elements.

5. Cooperative planning should be encouraged to provide a framework for diversity.

6. There is a need to clarify the respective roles of the universities and the profession in the preparation of architects.

Action on ASPG recommendations

While not necessarily supporting all of the relevant text, COU endorses the following recommendations:

R-1 The universities and the OAA recognize three distinct areas of responsibility with fundamentally different characteristics, relating to the determination of the total requirements for registration in the OAA as follows:

a) formal education in the subject of architecture where the responsibility is clearly within the jurisdiction of the universities;

b) work experience in the practice of architecture which is clearly under the jurisdiction of the OAA;

c) the intermediate area where integration of knowledge in architecture and the practice of architecture is of direct legitimate concern of both the OAA and the universities.

(see Section 4.1 (a)

*R-3 The OAA and the universities in Ontario with architecture programmes enter into a formal agreement to establish an Architectural Education Board of Ontario (AEBO) acting with a general mandate to advise (the bodies concerned) on all matters related to architecture in Ontario.

(see Section 4.1 (b)

*R-4 The participating universities offer a twelve-month professional architecture programme, consisting of:

a) an integrated field and classroom experience to provide a common core of knowledge;

b) specialized study whose nature would vary from university to university in accord with the particular resources and interests of the university in which the student is enrolled. The AEBO shall advise the universities (which are responsible for the formal education of students) and the OAA (which is responsible for certification of practicing architects) on matters of mutual concern and negotiate agreements between the parties.

R-6 Initially, the AEBO "recognize" the undergraduate degree programmes at the participating universities in Ontario, and that it then evaluate for recognition degrees in architecture offered by other jurisdictions in Canada and elsewhere.

(see Section 4.1 (c)

*R-8 The AEBO develop and administer a Qualifying Examination consisting of three parts:

*Revised from original recommendation

a) an entry filter to determine eligible candidates other than those enrolled in the professional diploma programmes;

b) a set of "knowledge base" examinations which would be intergrated with the professional diploma programme but which would constitute a separate hurdle for other candidates;

c) a professional practice legal examination which would be mandatory for all candidates.

(see Section 4.1 (e)

R-11 The OAA phase out the present OAA Registration Course and other requirements as soon as these new mechanisms are in place.

(see Section 4.1 (f)

*R-12 The AEBO be charged by the OAA and the participating universities with the responsibility for establishing a continuing programme of monitoring the university professional programmes in architecture. This mandate should include:

a) advice on criteria for "recognizing" undergraduate degrees for the purpose of admission into the professional programme; publication and regular review of a list of recognized degrees (including degrees from universities outside Ontario); consideration of individual applications for recognition of degrees not on the list;

b) conduct of an initial "appraisal" and regular review of the proposed professional diploma programmes, for the advice of the universities and the OAA on the accreditation of graduates of the programmes.

R-26 Development planning should be seen to be an on-going process and that each school should commit appropriate resources to continue its participation in that process.

(see Section 4.3)

R-27 Development plans and planning be coordinated and their implementation monitored by the OASDA. (See Section 4.5 (c)

(see Section 4.3)

*R-36 The five remaining university members of the ASPG be reconstituted as one-half of a ten-member joint committee with the OAA. The university members shall be responsible for representing approved COU policy on the implementation of recommendations in the report.

*Revised from original recommendation

The joint committee should operate with co-chairmen, nominated by the parent body of each side. Its terms of reference shall be:

a) To review the positions of the COU and the OAA on the recommendations in the report of the ASPG;

b) to develop a proposal for action on the report;

c) to report to both parent bodies as soon as feasible, but not later than the end of 1976.

R-42 OASDA be recognized by COU and MCU as the "discipline group" for architecture in Ontario,

(see Section 4.5 (c)

R-43 OASDA review and revise its constitution and membership in line with its new responsibilities as set out in this study.

(see Section 4.5 (c)

COU refers the following recommendations to:

Universities

R-2, R-5 (delete reference to MArch), R-10, R-13, R-14, R-16, R-17, R-18, R-19, R-20, R-21, R-22, R-23, R-24, R-25, R-28, R-30

OAA

R-2, R-7 (delete reference to MArch), R-9, R-10

Joint Committee of ASPG and OAA

R38, R-39, R-40, R-41, R-46, R-47

OASDA

R-35

The following recommendations are referred to the individual universities:

University of Toronto

R-31, R-48, R-49, R-50

University of Waterloo

R-32, R-51, R-52, R-53

Carleton University

R-33, R-54, R-55, R-56

Ryerson Polytechnical Institute

R-34, R-57, R-58, R-59, R-60

York University

R-61, R-62

The following recommendations are not accepted:

R-15, R-29, R-37, R-44, R-45.

June 3, 1976

II

Study of Architecture Education, Part I*

Report of the

Architecture Study Planning Group

Council of Ontario Universities
Conseil des Universités de l'Ontario
130 St. George Street, Suite 8039
Toronto, Ontario M5S 2T4

August, 1975

*See foreword for note on the status of this report

FOREWORD

This report was prepared by the Architecture Study Planning Group under the chairmanship of Roger J. Rossiter, Vice-President of Health Sciences, University of Western Ontario, without whose leadership and guidance the work of the group could not have come to fruition. With Dr. Rossiter's untimely death in February, 1976, members of the group lost both a mentor and a friend. We pay tribute not only to his contribution to the profession of architecture, where we came to know him personally, but also to his life-long contributions to Higher Education and to the profession at large.

"The new paradigm begins by shifting its focal point from well-designed buildings to man-oriented environments."

- Eberhard

"The three basic characteristics of any work of architecture, according to Wotton, 'Commodity, firmness and delight'... can be related (broadly!) to the social sciences, the physical sciences, and the arts."

- Desbarats

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Appendix F: Ontario Association of Architects Position Paper (B. Parks)

Appendix G: Colleges of Applied Arts and Technology (N.A. Sisco)

Appendix H: Memorandum concerning University of Toronto (D. Forster)

F O R E W O R D

This document contains the proposals of an Architecture Study Planning Group initiated by the Council of Ontario Universities. It represents Part I of a two-part series. Part I is being distributed for study in the universities and by other relevant bodies. Part II will summarize reactions to the proposals in Part I and will contain the conclusions of the Council of Ontario Universities.

Council of Ontario Universities
Conseil des Universités de l'Ontario

Report of the

Architecture Study Planning Group

1. INTRODUCTION

On June 7, 1974, the Council of Ontario Universities (COU) approved the establishment of an Architecture Study Planning Group (ASPG) to make recommendations concerning the orderly development of education in architecture.

1.1 Background

At present there are four undergraduate degree programmes in architecture in Ontario which were established in the following sequence in the universities: University of Toronto, University of Waterloo, Carleton University, and Ryerson Polytechnical Institute. There is one master's degree programme, at the University of Toronto, and there are no PhD programmes.

The following statement is taken from a submission (November, 1973) by the Ontario Association of Schools and Departments of Architecture (OASDA) to COU recommending a study of architectural education and gives some background to the work of ASPG.

> The Schools of Architecture at Waterloo and Carleton Universities and the Department of Architecture at the University of Toronto are experiencing a boom in enrolment applications for the undergraduate programme in architecture. Between them they offer 180 new places each year and in September, 1973, more than 800 bona-fide candidates produced more than 1,500 applications for those places. This enrolment surge is seen by these Schools as a growth opportunity but to realize it, a number of issues have to be raised that relate to other disciplines and the professional fields which interrelate with architecture, including coordination with respect to priorities for the development of graduate studies and peripheral programmes. In addition, none of the Schools at the present time have facilities which can be expanded, and hence, growth presents problems of capital budgeting for equipment and space as well as new programmes.
>
> Ryerson Polytechnical Institute in Toronto has announced new 4-year degree programmes in architecture, building science and project management. The impact of these new programmes on the other schools could be considerable and illustrates the urgent need of coordination, as they are shorter by one year, are based on a lower level of funding, and they pre-empt new fields of study where the professional linkages are unclear.
>
> The practice of architecture is inextricably

linked with the fate of the building industry, and hence its economic health is subject to the ups and downs of that rather chaotic industry. The pressure for change on the practice of architecture is therefore directly related to the changing needs for specialist professional services that the building industry generates in response to the changing social, economic, and political climate reflected in the changes in the interaction of land control and money availability. While the profession has maintained a strong and consistent image of what an architect is and what his services are in the design-build process, it is perfectly clear that the growth opportunity lies in more diversification and specialization and the integration of new knowledge into the building process. Thus the real manpower needs of the industry cannot be obtained from extrapolations of any of the specific existing categories.

The implication for the Schools from this is the strong need for more diversified programmes allowing many more options for the students enrolled. Such research-oriented programmes which could expand the application of new knowledge to all facets of the building industry, would include the fields of planning, urban design, landscape, interior design, industrial design, building science, building technology, and project management. Looked at in this way, the growth of the existing schools of architecture in Ontario is interrelated with that of the related disciplines mentioned above, and hence is closely related to the context in which the school is set, i.e. the resources available (people and funds), the academic environment, etc.

Some Key Problems

Some of the key problems facing the schools in Ontario at the present time are as follows:

1) While each school can and is, in fact, preparing its own unilateral development plan which is based on taking advantage of the potential of the particular university and locational context, the combination of the three plus the new programme at Ryerson

could easily over-emphasize a particular area of specialization, e.g. building science. Rationalization of programmes in order to prevent excessive competition for staff and budgets at the four schools is absolutely essential, particularly if they are to develop the strength to build toward graduate level studies.

2) Enrolment targets need to be established for each of the schools and for each of the degree programmes balanced out in total over the province. Ryerson's entry into the field poses problems of transferability and other issues related to standards. As a university-level programme is a new venture of Ryerson, it is important that in this professional area Ryerson is receiving adequate support, funding, etc. so there is no confusion when their graduates appear on the scene.

3) Discrepancies exist in the level of accommodation and equipment at the different schools, which have implications for both capital and operating budgets. For example, there is a wide discrepancy in the number of library holdings and support services available for these programmes which may influence the rate of programme development, particularly at the graduate level.

4) The potential for great diversity in the size of the schools in Ontario exists, and the decision to allow this to happen is something that needs to be made carefully. The enrolment potential, for example, suggests that the three schools could go to enrolments over 1,000 each. However, it may well be that only one school in Ontario should be encouraged to grow to this extent. Perhaps Ryerson has such a potential if we take the English polytechnics as an example. But again, the effects on the other programmes need to be considered at the same time such a decision would be taken so that the growth in one location does not pre-empt or preclude growth in another.

1.2 Membership

G. S. Abram, Architect, representing Ontario Association of Architects

G. A. P. Carrothers, Dean, Faculty of Environmental Studies. York University

F. Fisher, Chairman, Department of Architectural Science, Ryerson Polytechnical Institute

P. N. Prangnell, Chairman, Department of Architecture, University of Toronto

C. C. Ridsdale, Architect, representing Ontario Association of Architects

R. J. Rossiter (Chairman), Vice-President of Health Sciences, University of Western Ontario

D. Shadbolt, Director, School of Architecture, Carleton University

F. Watts, Director, School of Architecture, University of Waterloo

1.3 Terms of Reference

1) Identify major programmes and studies in the field of architecture.

2) Identify major cognate disciplines.

3) Examine current applications and enrolment data in these divisions at each Ontario university and at Ryerson.

4) Examine plans for each university and Ryerson for graduate, undergraduate and continuing education programmes in the major divisions of architecture.

5) Examine and evaluate present space and physical resources available to programmes of architecture in the universities and at Ryerson.

6) Analyze library resources.

7) Describe staffing patterns and characteristics of faculty at schools and departments of architecture.

8) Describe essential financial data on each school and department of architecture.

9) Solicit views of the Ontario Association of Architects for major developments in professional requirements over the next several decades.

10) Report on the present state of education in architecture in Ontario by institution and division (specialty) in respect of:

    (a) number and kinds of faculty
    (b) nature of programmes offered
    (c) enrolment at each university and at Ryerson by division
    (d) applications for spaces by division, admission requirements, quality of student body, and such other matters as are considered significant.

11) Report on present state of education in architectural subjects in the CAATs embracing such analysis as might be required from Items 1 through 10 above.

12) Make recommendations for the further development of present Schools and Departments and the development of new schools of architecture (if any) for the next decade at the undergraduate, graduate and continuing education levels by major division. In particular, recommend on any new programmes and new locations desired and the phasing-out of present programmes.

13) Make recommendations on desirable provincial enrolments year by year by level; to consider these enrolment figures from the viewpoint of society's need for architects' services relative to the manpower demands of the profession and demands for accessibility at the various levels; to suggest distributions of enrolment among the existing university programmes, at Ryerson and any new programmes to be offered.

1.4 Study Approach

The ASPG was designated by COU to include Directors/Chairmen of the four Ontario programmes in architecture, two representatives of the Ontario Association of Architects (OAA) and two academics from Ontario universities without programmes in architecture.

At the time of the establishment of the Study Group, COU asked the president of each of the Ontario universities whether his institution contemplated the introduction of programmes in architecture. All but York indicated that they had no such plans. York replied that the matter was still under study. Dean G. A. P. Carrothers was requested to keep the University informed of the progress of the study.

The ASPG was fortunate in obtaining the services of three following distinguished architect-educators to serve as consultants: Professor G. Desbarats, Doyen, Faculté de l'Aménagement, Université de Montréal; Mr. J. P. Eberhard, President, American Institute of Architects Research Corporation; and Professor B. P. Spring, Dean, School of Architecture, The City College of the City University of New York. The curriculum vitae of each of the consultants is given in Appendix 1.

In advance, the consultants were provided with the following information prepared by each institution:

1) List of faculty members for 1974-75.

2) Curriculum vitae of each faculty member.

3) Actual numbers of faculty members (full-time and part-time), number of first-year students, total number of undergraduate students (full-time and part-time), number of graduate students (full-time and part-time), for the years 1972-73, 1973-74, 1974-75, and projected annual numbers to 1984-85.

4) Actual number of degrees granted in architecture, both graduate and undergraduate, for 1972-73, 1973-74, and projected numbers to 1984-85.

5) An analysis of course registrations of architecture students in other departments, and of course registrations

of non-architectural students in architectural courses.

6) An analysis of weekly student-contact hours, weekly faculty-contact hours, section size, support staff, and average faculty salary by rank.

7) Detailed budgetary information.

8) A narrative description of the plans, ambitions, hopes, priorities, problems, difficulties, constraints (space, qualified staff, budget, university priorities, etc.), market for graduates and so forth, as it applies to the institution concerned.

The consultants then independently visited each of the four institutions for a maximum time of two days. The written reports of the consultants are presented as Appendices 2-4.

On May 27, the three consultants met with the ASPG to discuss the implications of the reports and to consider other matters presented to them by the Study Group.

In addition, Mr. A. E. Lappin of the University of Waterloo served as a space consultant. Mr. Lappin was provided with enrolment numbers for existing and projected programmes. He was asked to review the space available to each programme as well as any other general university space which might be utilized, particularly in relation to the Interim Capital Formula previously used by the Committee on University Affairs and COU Building Blocks Space-by-Function Formula. In addition, he was asked to comment upon the quality of the space and its general convenience relative to other facilities on the campus. Mr. Lappin met with the ASPG on May 27 and July 8. His report is presented as Appendix 5.

The ASPG also has been in close contact with the OAA throughout the study. Appendix 6 is an official statement from the Association sent to the Study Group by Mr. Brian Parks, Executive Director, on March 26, 1975.

On February 6, 1975, the ASPG met with Mr. N.A. Sisco, Chairman of the Ontario Council of Regents for Colleges of Applied Arts and Technology and five members of the CAAT Provincial Consultative Committee on Architectural Technology. Appendix 7 contains material provided by Mr. Sisco and his colleagues.

This approach to a discipline planning study in Ontario is experimental. It differs from the method used by the Advisory Committee on Academic Planning (ACAP) in several respects. In the first place, the Study Group includes the directors/chairmen of each of the programmes under study. In this way the director/chairman of the programme and the university* concerned is kept fully aware of the deliberations of the Study Group throughout all phases of its operation. By this stratagem it is hoped to avoid subsequent lengthy processes of rebuttals, appeals, counter-rebuttals, and so forth. Second, the ASPG includes two representatives from the OAA. In professional programmes such as architecture the professional body with the statutory responsibility for registration has an interest in the educational programmes in the universities. Third, the universities were visited by the consultants individually, rather than as a group. The ASPG thus had available three independent reports by distinguished architect-educators from outside the province The final recommendations of the ASPG do not necessarily reflect all of the views expressed by the individual consultants.

The success of this experiment obviously will be judged by its results.

---

* Where references made in this Report to the "university" (or "universities") in the sense that it refers to the parent institution(s) in which the programme in architecture is located, it includes Ryerson Polytechnical Institute.

2. SUMMARY OF RECOMMENDATIONS

The Architectural Study Planning Group recommends that:

R-1 The universities and the OAA recognize three distinct areas of responsibility with fundamentally different characteristics, relating to the determination of the total requirements for registration in the OAA as follows:

(a) formal education in the subject of architecture where the responsibility is clearly within the jurisdiction of the universities;

(b) work experience in the practice of architecture which is clearly under the jurisdiction of the OAA;

(c) the intermediate area where integration of knowledge in architecture and the practice of architecture is of direct legitimate concern of both the OAA and the universities.

(see Section 4.1 (a))

R-2 Assuming a "norm" of four years for the undergraduate degree, the universities and the OAA agree that the minimum total time requirement to registration as an architect in Ontario be reduced to seven years.

(see Section 4.1 (a))

R-3 The OAA and the universities in Ontario with architecture programmes enter into a formal agreement to establish an Architectural Education Board of Ontario (AEBO) acting in the area of joint responsibility on behalf of the universities and the OAA.

(see Section 4.1 (b)

R-4 The participating universities (as in R-3) offer a 12-month professional Master of Architecture programme, consisting of:

(a) a common "preceptorship programme" of integrated field and classroom experience, and

(b) specialized study whose nature would vary from university to university in accord with the particular resources and interests of the university in which the student is enrolled. The "preceptorship" would be as determined by the AEBO, the specialized study would be as determined by the university subject to approval and monitoring by the AEBO.

(see Section 4.1 (c))

R-5 Entry to the professional MArch degree programme would be through each university individually. It would normally be available to candidates holding undergraduate degrees (in architecture) "recognized" by the AEBO.

(see Section 4.1 (c))

R-6 Initially, the AEBO "recognize" the undergraduate degree programmes at the participating universities in Ontario, and that it then evaluate for recognition degrees in architecture offered by other jurisdictions in Canada and elsewhere.

(see Section 4.1 (c))

R-7 Alternate routes to registration in the OAA be made available to persons who do not have the qualifications for entry to the professional MArch degree programmes offered by the participating universities, and that these alternatives be entirely under the jurisdiction of the AEBO.

(see Section 4.1 (d))

R-8 The AEBO develop and administer a Qualifying Examination consisting of three parts:

(a) an entry filter to determine eligible candidates other than those enrolled in the professional MArch degree programmes;

(b) a set of "knowledge base" examinations which would be integrated with the professional MArch programme but which would constitute a separate hurdle for other candidates;

(c) a professional practice legal examination which would be mandatory for all candidates.

(see Section 4.1 (e))

R-9 The OAA Registration Board develop and administer an oral examination on the subject of professional ethics to be given on completion of all other requirements for registration.

(see Section 4.1 (e))

R-10 The period of work experience required within the recommended minimum seven year total period to complete registration requirements (see R-2) be two years, acquired in one continuous period or in interrupted periods after completion of at least three years of study in architecture, and that at least one year of the required work experience be completed in the office of a registered architect practising in Ontario.

(see Section 4.1 (f))

R-11 The OAA phase out the present OAA Registration Course and other requirements as soon as these new mechanisms are in place.

(see Section 4.1 (f))

R-12 The AEBO be charged by the OAA and the participating universities with the responsibility for establishing a continuing programme of monitoring the university programmes in architecture. This mandate should include:

(a) determination of criteria for "recognizing" undergraduate degrees for the purpose of admission into the MArch (Professional) programme; publication of a list of recognized degrees (including degrees from universities outside Ontario); review and revision on a regular basis of the list of recognized degrees; consideration of individual applications for recognition of degrees not on the list;

(b) conduct of an "assessment" in collaboration with ACAP and OCGS of the proposed individual Master of Architecture programmes for the purpose of assisting the universities in introducing the programmes in a systematic and orderly manner;

(c) determination of a process for continual "appraisal" of each of the Master of Architecture programmes for the purpose of "accrediting" the university to offer the programme with authority to require modification of any requirements of the degree programmes when considered necessary for the overall welfare of the preceptorship programme.

(see Section 4.1 (g))

R-13 The Schools and Departments of Architecture in Ontario, over the next decade, develop a programme of graduate studies and research covering the full spectrum from fundamental research to applied and mission-oriented research.

(see Section 4.2 (a))

R-14 To achieve this goal, the Schools and Departments should decide upon a clear mission and start now to plan a systematic build-up of resources and research activity in the particular area of study selected.

(see Section 4.2 (a))

R-15 OASDA monitor and coordinate this work, liaise with COU, OCGS, ACAP, and with the Faculties and Schools of Environmental Studies and Planning in Ontario in order to enhance and improve the potential range of activities, including publication, sharing resources, and encouraging student mobility throughout the system.

(see Section 4.2 (a))

R-16 The schools should develop criteria for "acceptable" consulting on the principle that no consulting work or research should be undertaken unless it can be demonstrated that it is to the benefit of the students and/or the educational programme.

(see Section 4.2 (b))

R-17 Consulting activities of full-time members of the faculty of the schools should be conducted through a "Contract Research Group" organized within the school to screen and monitor them and administer the contracts involved in a manner "open" to the administration of both the school and the university.

(see Section 4.2 (b))

R-18 The universities and schools should give due consideration to the development and recognition of appropriate formula for the definition of a "full-time" appointment over an eleven-month year and set out a list of activities which a professional faculty member may normally engage in including consulting. Consideration should be given to adopting a variation of "geographic full-time" appointments used in the medical faculties.

(see Section 4.2 (b))

R-19 Given full accountability and some control as set out in the above recommendations, the university should recognize contract work and consulting activities as legitimate and equal alternatives to other forms of academic research now used as criteria for the evaluation of faculty eligibility for promotion and tenure.

(see Section 4.2 (b))

R-20 Schools should make a concerted effort to explore new and alternative instructional formats and new instructional techniques to improve the quality of teaching in all areas of the programme and to improve the efficiency of resource utilization with a view to cost reduction. This recommendation applies particularly to studio courses in the undergraduate programmes where alternatives to "board-crits" as the basis of instruction are clearly needed.

(see Section 4.2 (c))

R-21 The schools should endeavour to obtain and share the services of an educational consultant or consultants for one year to provide expert assistance in instructional development.

(see Section 4.2 (c))

R-22 The universities and the schools should agree on guidelines for full-time workloads and a target of 1:13 for staff-student ratio in this discipline.

(see Section 4.2 (c))

R-23 To facilitate the student to manage his/her own learning experience, the schools should agree that the curricula be organized to keep the student workload to a reasonable level.

(see Section 4.2 (c))

R-24 To avoid stagnation due to isolation from practice or aging or tenure, a system of rotating one or two-year leaves for faculty members should be instituted so that they may periodically play a major role in a significant professional project, or obtain further education to upgrade or change their qualifications. In making this recommendation, the ASPG is aware that this principle should probably apply equally to all faculty members in the universities, and it therefore urges COU and MCU to consider ways and means to develop the funding required. At the same time, the ASPG would argue for priority consideration in support of fields, including architecture, that are in a stage of rapid transformation.

(see Section 4.2 (c))

R-25 The schools should consider ways and means to make selected undergraduate and graduate courses accessible to a wider public, and to provide intensive short courses in architecture to meet specific demands.

(see Section 4.2 (d))

R-26 Development planning should be seen to be an on-going process and that each school should commit appropriate resources to continue its participation in that process.

(see Section 4.3)

R-27 Development plans and planning be coordinated and their implementation monitored by the OASDA. (See Section 4.5(c))

(see Section 4.3)

R-28 Development plans and planning projects be categorized as follows:

(a) Immediately feasible: to include those projects (e.g. reorganization and consolidation projects) which can be implemented within the next 2-5 years by a participating school given the approvals, authority and resources of the parent university alone and therefore require only intramural negotiations;

(b) Intermediate-range: to include those projects which can only be implemented within 3-10 years from now after extra-mural negotiations and approvals (e.g. MCU for new degree programmes, COU for ACAP approvals) which require additional funding (operating and capital) and coordination with other schools, which therefore require lead time and considerable documentation, but which require planning action now;

(c) Long-range: to include those projects which may become feasible after 5 years from now but which should be explored now and cyclically to the point of determining the degree of probability of their ultimate feasibility.

(see Section 4.3)

R-29 The OASDA maintain a watching brief on category 1 projects above, but concern itself mainly with category 2 and 3 projects.

(see Section 4.3)

R-30 Because most space formulae are best applied in macro fashion at the institution level, the figures used in the Lappin Report (see Appendix 5) can at best be considered as "averages" but should provide reasonable guidelines for future planning. It is recognized here that each institution has the choice to vary the use of space within the overall allocation in order to realize its own priorities.

(see Section 4.4 (a))

R-31 The University of Toronto relocate at least one of the departments in the recently disbanded Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. With funds made available for renovations, the present facility can continue to serve the needs of the reorganized Faculty of Architecture and could quite possibly be shared with the remaining Department.

(see Section 4.4 (a))

R-32 Waterloo be given approval to proceed immediately with the planning of a new facility to house the new separated or integrated faculty or department as recommended by the ASPG. The new facilities should be ready for occupancy in fall, 1978. In the meantime, some provision of temporary space will be necessary to accommodate the increasing number of students.

(see Section 4.4 (a))

R-33 Carleton be allocated capital funds for renovations in order to maximize the use of the present building, and for expansion of the building, all to accommodate the expanded programme that has been recommended.

(see Section 4.4 (a))

R-34 Ryerson be given approval to proceed with the planning of a new facility of a size as suggested in the Lappin Report. The facility should be ready for occupancy not later than fall, 1979.

(see Section 4.4 (a))

R-35 During the 1975-76 academic year OASDA sponsor a study of the library facilities in the four universities with programmes in architecture.

(see Section 4.4 (b))

R-36 The ASPG be continued for a limited interim period to elaborate the nature and functions of the AEBO and to help negotiate its establishment by the universities and the OAA.

(see Section 4.5 (a))

R-37 The OAA modify the regulations of the Registration Board and take such other actions as are appropriate, and the participating universities take such formal action in their senates and boards of governors (or by other bodies) as required to explicitly delegate authority to the AEBO to accomplish its purposes.

(see Section 4.5 (b))

R-38 The AEBO be composed as follows:

(a) one member named by each of the participating universities (i.e. 4, initially),

(b) two members named by the OAA,

(c) two non-architect members: one named by OCUA, one named by Lieutenant-Governor-in-Council.

(see Section 4.5 (b))

R-39 The term of office of the AEBO members be not less than two years, terms staggered.

(see Section 4.5 (b))

R-40 The Chairman of the AEBO be elected from among its members for a one-year term, which would not be immediately renewable.

(see Section 4.5 (b))

R-41 The AEBO appoint an Executive Officer acceptable to both the academic and the professional communities, with a Secretariat.

(see Section 4.5 (b))

R-42 OASDA be recognized by COU and MCU as the "discipline group" for architecture in Ontario.

(see Section 4.5 (c))

R-43 OASDA review and revise its constitution and membership in line with its new responsibilities as set out in this study.

(see Section 4.5 (c))

R-44 The OAA consider immediately the appropriate mechanism for working with the universities in the establishment of the AEBO, and the phasing in of the new procedures and requirements for registration as set out in this Report.

(see Section 4.5 (d))

R-45 The recommended professional master's degree programmes be funded at an operating formula grant weight of 4 and the revised undergraduate programmes continue to be funded at an operating grant formula weight of 2.

(see Section 4.6)

R-46 To accommodate phasing in of these professional master's degree programmes, start-up funding be provided to cover overhead costs of the AEBO.

(see Section 4.6)

R-47 Separate funding be provided for the development and administration of the Qualifying Examination, part of which would be provided by candidates' fees, and these funding arrangements should be decided at the time of establishing the AEBO.

(see Section 4.6)

'or Toronto:

R-48 The following immediately feasible actions be initiated:

(a) with the dissolution of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture, the Department of Architecture should become the Faculty of Architecture with its own Dean;

(b) within the Faculty of Architecture, four new programmes, each with its own programme chairman be established:

(i) a Programme in Architectural Studies - a programme making lecture, workshop and studio courses in architecture available to students registered in BA or BSc degree programmes within the Faculty of Arts and Science. A maximum enrolment of 150 places is suggested for the studio course;

(ii) a Programme in Architecture - a programme of two years of intensive studies in architecture leading to a Bachelor of Architecture degree.

Admission to this programme would require a BA or BSc degree and prerequisite courses, equivalent to a one-year academic load in the Programme of Architectural Studies. Students with a BA or BSc degree, but not having this prerequisite would, within the BArch degree programme, complete an additional year of study;

The combined admission to the Bachelor of Architecture degree programmes should be held at the present level of 70 students.

(iii) a Programme in Graduate Studies in Architecture (Professional) - leading to a Master of Architecture (Professional) degree; (See recommendation R-49 following);

(iv) a Programme in Graduate Studies in Architecture - leading to a Master of Architecture (Academic) degree. (See recommendation R-48 (d) following).

(c) the Bachelor of Architecture degree programme as it is now constituted be phased out;

(d) the Faculty of Architecture reorganize the present graduate programme of studies in architecture leading to a Master of Architecture degree and maintain an enrolment of 20 students. Provision should be made for this programme to draw from each of the four divisions of graduate studies (social, physical, life sciences and humanities) to strengthen graduate programmes of study in areas which cross disciplines, but focus on the man-made environment.

(see Section 5.1 (a))

R-49 The following intermediate-range actions should be initiated:

(a) the Faculty of Architecture establish a twelve-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see Section 4.1) and designed to accommodate an anticipated enrolment of 75 students;

(b) following on a decision regarding the allocation of space to the new Faculty within the existing building, the Faculty should proceed immediately to plan and implement a renovation project to provide for the revised teaching programmes.

(see Section 5.1 (a))

R-50 The following long-range actions should be considered:

(a) the development of several specialized courses within the Master of Architecture programme, linking, through the School of Graduate Studies, allied interests and disciplines. The Master of Architecture programme should maintain an enrolment of not more than 40 students;

(b) the expansion of the range of offerings in the programme in architectural studies, so that courses in architecture are available to all undergraduate students who desire such courses.

(see Section 5.1 (a))

For Waterloo:

R-51 The following immediately feasible actions be initiated:

(a) the School, Faculty and University begin discussion to determine the basis of continuity of the School (i.e. integrated, separated, other) and then decide upon the appropriate administrative linkages, budget levels, staffing ratios, administrative support, physical space and plant allocation based on an enrolment target of 350 students;

(b) on the basis of the decision in R-51 (a) above, the University should appoint a Director or Dean whose term of office would commence July 1, 1976;

(c) the present Director should be given a clear mandate to start the required reorganization, and with the faculty, he should then consolidate and reorganize the curriculum to meet the requirements of the approved organizational option based on a clearly stated mission or focus, developing appropriate linkages to other faculties and programmes, all phased to coincide with the establishment of the proposed graduate "preceptorship" programme referred to in R-52 (a) following;

(d) the school reorganize its work/study programme to meet the revised programme requirements;

(e) the University, in consultation with the school, find additional temporary space immediately for use in the 1975-76 session;

(f) given improved staffing and following reorganization, the school develop a research programme to develop knowledge, expertise and contacts in areas related to development plan priorities.

(see Section 5.1 (b))

R-52 The following intermediate-range actions and projects should be initiated:

(a) establish a 12-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see Section 4.1) and designed to accommodate an anticipated enrolment of 30 students;

(b) the school should begin immediately to plan a building project to provide more student places and to facilitate the change in teaching programme, and the University should take the necessary steps to implement it as soon as possible.

(see Section 5.1 (b))

R-53 The following long-range actions and projects should be considered:

(a) graduate degree programmes, Master of Architecture (Environmental Design), Master of Architecture (Academic).

(see Section 5.1 (b))

Carleton:

R-54 The School of Architecture initiate the following immediately feasible actions or projects:

(a) consolidate and reorganize the present five-year BArch programme to four years, phasing the implementation of the changes to coincide as nearly as possible with the establishment of the new fifth-year graduate programme referred to in R-55 (a) following, strengthening the mandatory core programme and replacing the present wide-ranging and freely elected "minor" with a few well defined areas of concentration chosen on the basis of maximum potential, real support from and interactions with other sectors of the University, reallocating resources accordingly. Consideration should be given to naming the degree Bachelor of Environmental Design (Architecture);

(b) consider ways and means to improve space utilization and increase the number of available student places to approximately 350, including modification of the policy regarding allocation of student work stations in studio areas;

(c) form a Contract Research Group, regularize research and consulting activities as recommended in section 4.2 (b), expand these activities in selected areas to develop knowledge, expertise and contacts in areas related to development plan priorities;

(d) decide upon the most promising source of outside funding support; and develop an appropriate "project-office", check out feasibility, and if feasible, implement it.

(see Section 5.1 (c))

R-55 The following intermediate-range actions and projects be initiated:

(a) the School of Architecture establish a twelve-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see Section 4.1) and designed to accommodate an anticipated enrolment of 45 students;

(b) Carleton University should consider the possibility of reorganizing a number of professional schools, including Architecture, and perhaps the Faculty of Engineering, into a larger division of professional programmes for the purpose of increasing its offerings in and expanding its research and graduate study opportunities in the broad field of environmental design. Alternatively, it should consider the establishment of a Faculty of Environmental Design in the near future in order to focus campus interests in this field;

(c) the School of Architecture should, in collaboration with the School of Industrial Design, the Faculty of Engineering (particularly the Department of Civil Engineering) and other interested sectors of the University explore ways and means to expand enrolments, course offerings (graduate and undergraduate), resources, research and other activities in the field of environmental design;

(d) explore, and where possible, implement continuing education and/or graduate diploma programmes in architecture and environmental design, designed to set the groundwork for graduate degree programmes to follow;

(e) the School of Architecture should begin immediately to plan and implement a renovation project to modify its physical plant, to provide more student places and facilitate the changed teaching programme, and simultaneously, to begin the planning process for expansion of the School of Architecture building, all of which would accommodate a total of 400 students.

(see Section 5.1 (c))

R-56 The following long-range actions and projects be considered:

(a) graduate degree programmes, Master of Architecture, Master of Environmental Design, suggested target enrolment total of 20 students;

(b) reorganization of the schools into a Faculty of Environmental Design.

(see Section 5.1 (c))

For Ryerson:

R-57 Ryerson take whatever steps are necessary with the MCU, COU and OCUA to ensure that the funding of its degree programmes is brought to parity with the universities, and that its procedures for programme development, data collection, etc. are all consistent and comparable with those of the universities.

(see Section 5.1 (d))

R-58 The following immediately feasible actions or projects be initiated:

(a) Ryerson should provide some additional funding to improve the staff/student ratio and operational budget for the programme in architectural science to bring it in line with R-22;

(b) the number of new students admitted to the programme in architectural science should be held at the present level (120), while the staff build-up occurs to accelerate the achievement of improved ratios before further development is commenced.

(c) the Department of Architectural Science should, with the assistance of its Advisory Council and other experts, continue to strengthen its four-year undergraduate curriculum based on a solid core programme in architecture, building science and project management, while enriching the socio-behavioral science and humanities inputs. Consideration should be given to designating the degree as a Bachelor of Science in Architecture;

(d) the Department of Architectural Science should work out a detailed development plan, based on a clearly stated theme within the field of professional practice and building science, which would further widen the scope and options available in the present programme. Because of the wide range of employment opportunities such a programme could serve, consideration should be given to a very great increase in enrolment, in the long range say to 800+. Consideration should be given to the appropriate reorganization of the Department, including the possibility of its becoming an autonomous Faculty within the Institute;

(e) Ryerson and the OAA should enter into discussion concerning the future of the graduates of that programme with respect to registration requirements, who graduate during the interim period until the AEBO is established and operational.

(see Section 5.1 (d))

R-59 The following intermediate-range actions or projects should be initiated:

(a) the Department of Architectural Science establish a twelve-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see Section 4.1) and designed to accommodate an anticipated enrolment of 60 students;

(b) planning by the appropriate departments in Ryerson should begin for the eventual purchase or construction of suitable physical plant to accommodate the expanded programme;

(c) the Department of Architectural Science should develop a research and consulting programme aimed at defining the career-role objectives of the development plan, obtaining first-hand field experience, defining the knowledge base relevant to teaching programmes in these areas, locating and co-opting expertise, upgrading staff qualifications, etc.

R-60 The following long-range actions or projects be considered:

(a) continuing education, graduate diploma and graduate degree programmes.

(see Section 5.1 (d))

For York:

R-61 The following intermediate-range actions or projects be initiated:

(a) York University give serious consideration to the introduction of an undergraduate degree programme in architecture;

(b) opportunities for focusing on the subject matter of environmental design, urban design, architectural studies at the graduate level, be continued.

(see Section 5.1 (e))

R-62 For the long range, consideration be given to participation in the professional Master of Architecture programme.

(see Section 5.1 (e))

3. OVERVIEW: IDENTIFICATION OF ISSUES

On receipt of the information provided by the universities, the OAA, and the consultants, the ASPG undertook a wide ranging series of discussions on matters relating to the profession of architecture, to architectural education in general, and to specific schools. The thrust of these discussions was to identify issues of concern and the situations giving rise to those issues. This section of the Report records the salient points of the discussions and the conclusions drawn.

3.1 The Profession of Architecture

The profession of architecture consists, technically, of those persons who are registered to practise in one of the provinces of Canada and are thereby entitled to call themselves "architects". The control of the practice of architecture is a provincial matter, hence each province in Canada has a separate "Architects Act" which defines the legal basis of the practice of architecture in that province, and which sets up a provincial "Association of Architects" to administer the Act and control the practice. An architect may be registered in one or more provinces but he must meet the requirements of each separately. The provincial associations, with the exception of Quebec, have a collective organization, called the Royal Architectural Institute of Canada (RAIC). By agreement, an architect who becomes a member of one of the participating provincial organizations automatically becomes a member of the RAIC and uses the letters MRAIC to designate his status as a member rather than the designation of the provincial association. Thus there appears to be an overall national organization, but the legal powers are all at the provincial level.

In Ontario, the OAA is the body designated by the province to administer the Architects Act and to control the practice of architecture in the Province. There are approximately 1,600 registered architects in Ontario. To become registered as an architect in Ontario, a candidate must have completed:

(a) a recognized university-level programme in architecture of five years duration or its equivalent;

(b) three years of logged work experience in an architect's office, such work experience to be acceptable to the OAA;

(c) the OAA registration course of two weeks duration and the examinations on this course material.

In a typical case the whole process would take eight years from university entry with Grade XIII. In fact, this represents the minimum time, and many candidates take considerably longer.

Up to this point we have described the formally organized profession of architecture. There are, of course, many persons at work in the province who do not choose to complete their registration with the OAA for one reason or another

but who take an active interest in architectural affairs in the province. Many or these persons, usually employed by architects. federal, provincial or municipal governments, have all the required educational qualifications and work experience, but have not taken the registration course. We can add to this group the trainees and graduates of the schools who are still acquiring the necessary credentials. In broad terms then, the profession of architecture in Ontario could be described as a considerably larger group than the members of the OAA.

The professional "architect" provides a range of specialized services to a client related to the programming, design, and construction of buildings as defined in the Architects Act. The demand for these services is, in part, related to the kinds of projects to be undertaken, and hence the nature of practice ranges from the one-man office to partnerships with a wide diversity of professional skills. There is a firm conviction in the profession that a mastery of a basic knowledge and set of skills to qualify as a kind of "general practitioner" is mandatory for a person to be allowed to be admitted to the profession and use the title "architect". The OAA Registration Board has recently approved a document which outlines minimum performance criteria which attempt to define what an architect must be "able to do" to meet this "general practitioner" requirement. (See Appendix 6)

On the other hand, there is clear evidence that precise role specialization does occur in practice and like any dynamic field, new roles are constantly emerging. The American Institute of Architects, in a recent study entitled Creating the Built Environment, lists 18 new career roles that have evolved recently in the practice of architecture. The arguments in that document clearly make the case for the recognition of specialization in the field of architecture as opening up new opportunities for practice extending the involvement of architects in the determination of the built environment.

One of the ASPG's consultants, Bernard Spring, sets out a new definition of the task and role of the architect. (See Appendix 4)

> This definition, which is, as it should be, broad, nevertheless sets clear boundaries for the task and role which should be the immediate concern of the schools and the organized profession. Needless to say, many individual architects may make significant contributions beyond these bounds. But this will be because of personal motivation and ability

rather than because of the specific goals of architectural education and registration. The definition has two components:

1. An architect should be able to assist public bodies, elected officials, administrative agencies, private clients and user groups in the generation, evaluation and choice of policy alternatives concerning changes in the man-made, physical environment.

2. The architect should be able to make decisions about the most effective strategies and use of resources to carry out policy decisions about physical change in the sectors of the environment intended for human use and occupancy.

While the Study Group was not prepared to adopt this definition as its own, it nevertheless found it particularly helpful in "sorting out the central thread of architectural education which distinguished it from the education of those in related disciplines concerned with environmental change and environmental quality". The ASPG also agreed with Spring on the "importance of making a distinction in education, practice and licensing between those things an architect is responsible for knowing how to do and those things it would be valuable for him/her to be aware of".

At a different level, John Eberhard, another of the consultants to the Study Group, puts forward the notion of changing paradigms in the design professions. (See Appendix 3) This is a shift in the theories, value systems, and skills of the new generation of design professionals. He argues that

> just as the earth was considered to be the centre of the universe prior to Copernicus's theory, so the "well designed building" has been central to the shared paradigm of architects. Central to the new paradigm which is now emerging is man, and all men in a free society. To design a fit environment for man is not the same thing as designing a beautiful object called a building. The building may photograph well, may be structurally sound, and may have sufficient mechanical systems and not be a good place to live or work or worship. Even if a building were to meet these tests and yet to be placed in the midst of an urban mess, a jewel

> amongst the grime of urban life, it would not represent a sufficient professional response in terms of the new paradigm. As this new paradigm for architecture emerges it holds a promise of a new sense of relevancy and community from all men to their built environment."

Eberhard's paper is a lucid articulation of observable trends at the schools in the approach of many individual faculty members and a new generation of students. It also accounts for some of the confusion in the aims and objectives of the programmes in the schools, and in the dialogue between professionals in the schools and in practice which can be seen to stem from a conflict between these two paradigms.

Generally speaking, issues related to the philosophy and direction of the profession are discussed in the literature of the field and on an ad hoc basis by individual practitioners and teachers, but no formal vehicle exists for the coordination of the educational interests of the schools and the profession. The OAA has set up a series of Education Committees over the past six years which have attempted to deal with some of these issues, but which have not been completely effective despite some hard work and many good intentions.

The key issues, then, are:

- the distinction between the "profession" and the "practice" of architecture and the implications for education;
- the inherent conflict between interests of schools in the profession and the professional Associations' interests in preparation for practice;
- the length of time needed to prepare a person for registration;
- the OAA's insistence on the "general practitioner" model and hence the encyclopedic range of minimum performance requirements;
- the lack of articulation and recognition of evolving specialized roles in practice;
- the distinction between education, practice and registration requirements and the clear allocation of responsibility for each;
- the confusion resulting from a conflict of "paradigms" and the absence of a "shared paradigm";

3.2 Architectural Education

It may be useful to make a distinction between education and training in order to clarify the task before us. Education has to do with learning to master a particular knowledge area but it also has to do with the development of the ability to critically examine and assess the assumptions and ideas particular to that knowledge area. Education is thus essentially concerned with "how" and "why" as distinct from training, which is concerned only with "how". Training is a process by which a person is taught how to master the procedures, techniques, skills of a particular knowledge area in order to apply it. When we refer to professional education we are therefore talking about education which has embedded within it an essential element of training.

If we recognize this distinction between education and training then we must also recognize that curriculum, teaching method, format, and the appropriate milieu are all factors to be considered, so that we must decide which parts of the total "educational" package can best be obtained in a university, and which may be best obtained in practice. This issue is normally discussed within the context of a more general and practical concern, namely the appropriate minimum length of time for a candidate to spend in each of these environments in order to qualify for registration. At the present time, the OAA considers that five years in a university environment and three years in a practice environment is appropriate. The fact that Ryerson's degree programme is four years in length heightens this discussion.

If we compare the length of Ontario programmes with those at other universities in Canada, the U.S. and the U.K., we see some quite startling differences (refer to Figures A and B). In the first instance, the nominal use of descriptive terms such as "five-year" programmes is misleading. If we examine the actual instruction time on a smaller time unit such as the week, we discover, for example, that a "five-year" programme in Ontario is a total of 125 weeks duration, compared to a "five-year" programme in the United States which is a total of 150 weeks duration, or a "five-year" programme in the United Kingdom which is a total of 175 weeks duration. These differences occur because of the length of the academic year in these different countries. The difference is dramatic in terms of total instructional time when we consider that the differential of 50 weeks between

OTHER UNIVERSITY COURSES

CO-OP WORK EXPERIENCE

LOGGED CO-OP WORK EXPERIENCE

ARCH UNDERGRADUATE

LOGGED WORK EXPERIENCE

UNIVERSITY and PROFESSIONAL SUPERVISED WORK EXPERIENCE

M ARCH (P) PRECEPTORSHIP

ARCH. CONTENT INTEGRATED IN OTHER U/G PROGRAMMES

* REGISTRATION

LEGEND THIS LEGEND REFERS TO FIG'S A, B, E, G, H.

FIGURE A

GRAPH SHOWING COMPARATIVE DATA ON NORMAL SEQUENCE OF INSTRUCTIONAL TIME AND WORK EXPERIENCE TO MEET REGISTRATION REQUIREMENTS VIA EXISTING SCHOOL PROGRAMMES IN VARIOUS JURISDICTIONS

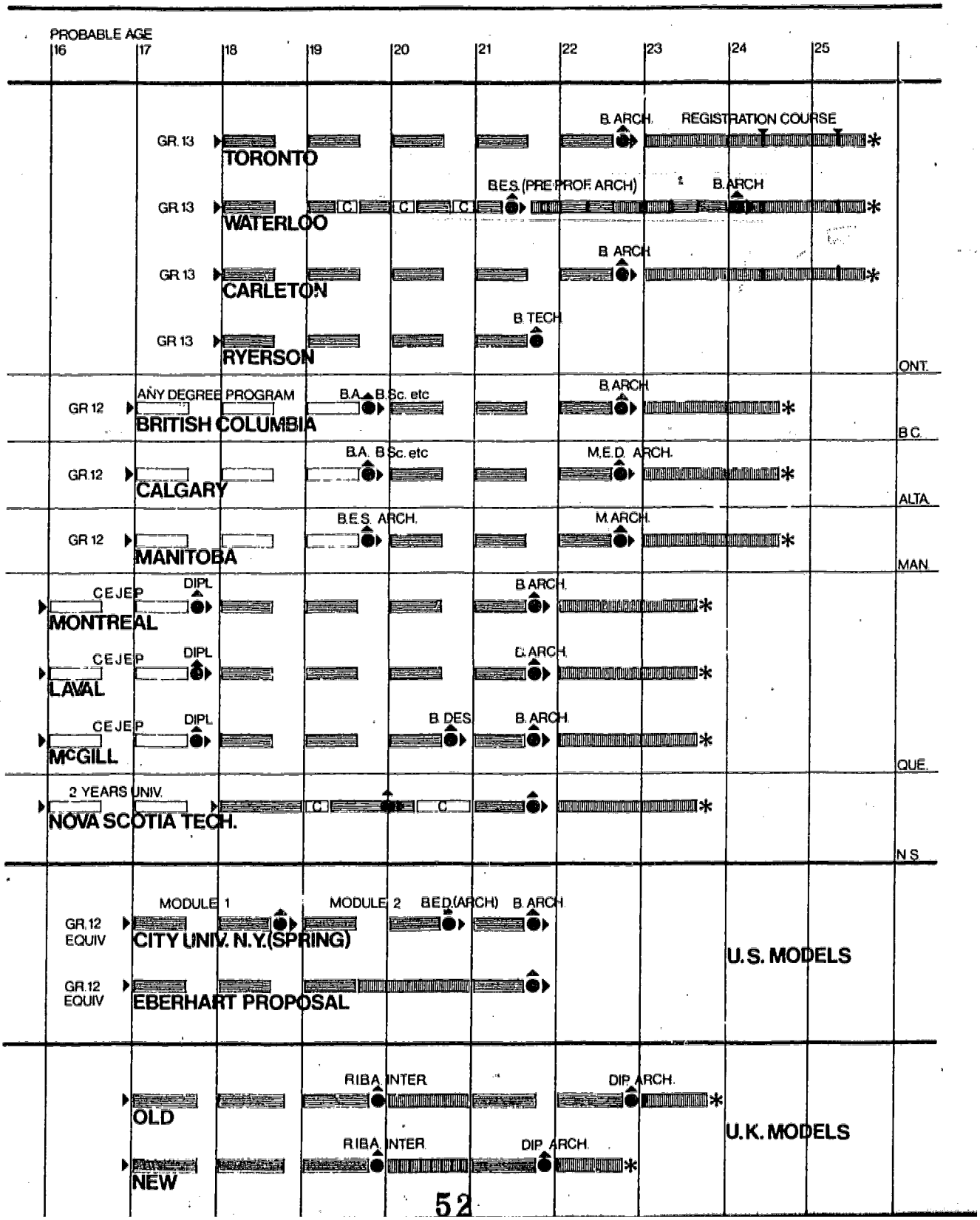
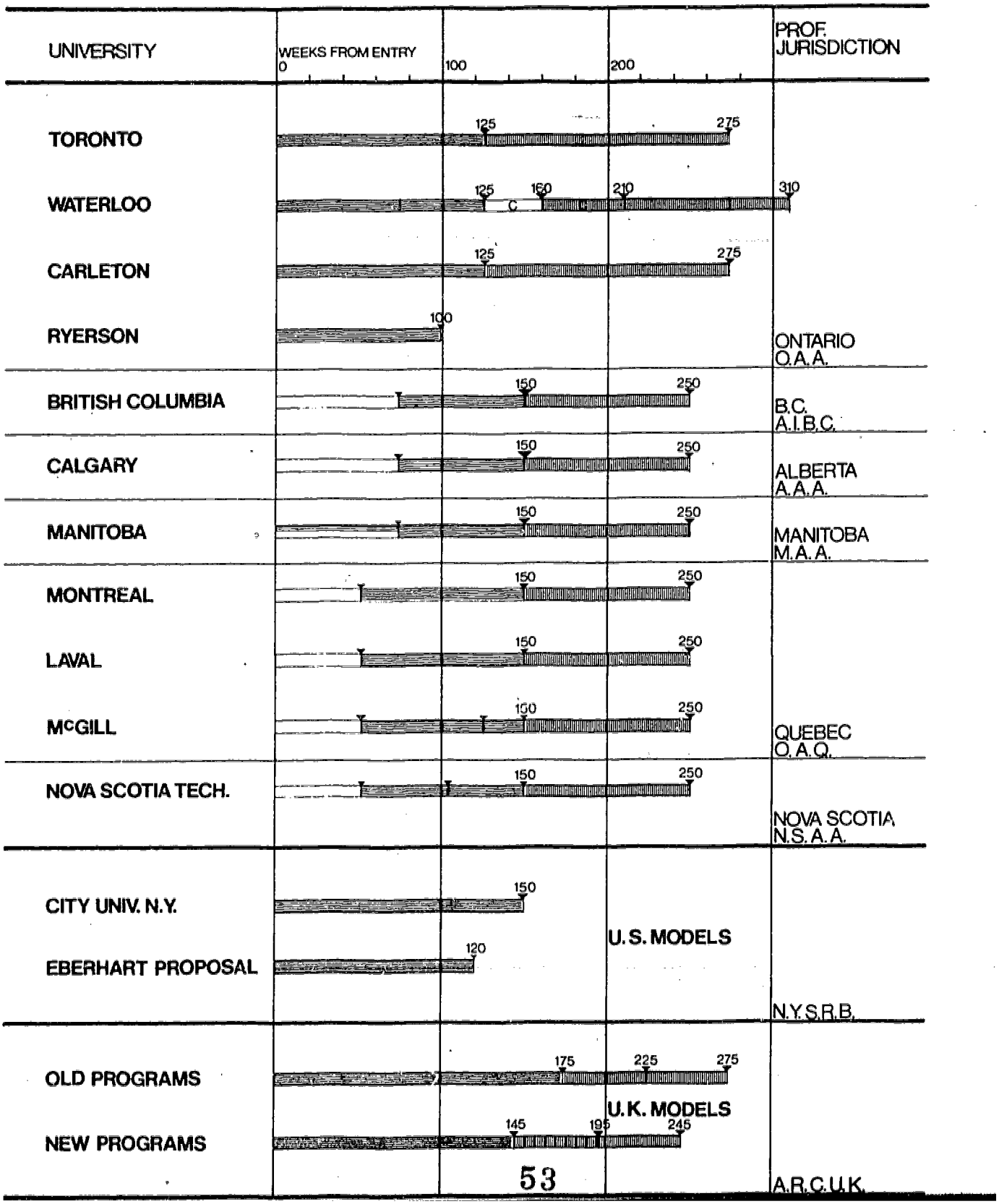


FIGURE B

GRAPH SHOWING CUMULATIVE INSTRUCTIONAL TIME AND WORK EXPERIENCE IN WEEKS FROM ENTRY TO MEET REGISTRATION REQUIREMENTS VIA EXISTING SCHOOL PROGRAMMES IN VARIOUS JURISDICTIONS



the Canadian and the old pattern for the U.K. schools represents a full two academic years on the university programmes in Ontario. With its four-year programme, the difference for Ryerson is the equivalent of three academic years of instruction.

Similarly the length of required work experience before registration is dramatically different. The Ontario requirement is 150 weeks, compared with the U.K. requirement of 100 weeks, 50 weeks of which is now integrated with the educational programme.

Still another point of comparison is the age at which licensing can be achieved. The typical Ontario student would be 25 years old taking the shortest route to registration as compared to his British equivalent who can achieve this goal at age 22 or 23 despite the longer instruction time. Figure A illustrates clearly the effect of Grade XIII entry in furthering this delayed point of registration. In summary, the four Ontario programmes start later, have less instructional time and more work experience requirements than most other comparative programmes.

Still another question arises with regard to the nature of instruction the student candidate should or should not receive during the period of required work experience before registration. One of our consultants, for example, recommends that a student should be placed in a practice environment for a period of one year after three years of the educational cycle at the university in order to validate the education experience before returning for the final year of the programme. This would correspond to the new U.K. programmes but it would require a partnership between the schools and the OAA to adequately design and supervise this period. It also raises the issue as to whether the student should be employed by the office on salary during this period or whether he should pay a fee for it on the basis that it is an instructional period. There is an obviously fundamental difference between these two alternatives which affects the expectations and performance of both the student and the employer.

A number of years ago, the OAA lengthened the period of work experience required for university graduates and added a series of lectures called the Registration Course, which now consists of a total of two weeks of concentrated lecture material on which the candidate for registration is examined. This requirement was introduced on the argument that it is only at the point of registration that a candidate is adequately motivated to consider a number of professional practice issues, and that it is at this time that in-depth consideration of these particular subjects can best be approached. In addition, by offering the Registration Course, the OAA sought to guarantee a uniform standard for registration in Ontario.

Although some aspects of the programme are well developed, the OAA, in recent years, has had considerable difficulty both in staffing and maintaining this programme. Because the schools of architecture in Ontario have, in recent years, taken quite divergent directions the profession is reluctant to remove the Registration Course requirements unless all the schools would undertake to take over the particular course material and integrate it into their teaching programmes. There is therefore, a need for active discussion between the schools and the Association to determine the nature of appropriate joint action to resolve this problem.

A number of British experiments during the past few years have explored the possibilities of integrating office practice into the operation of a school of architecture in order to provide the undergraduate student with a form of office experience with a heavy instructional component under the direction of an in-house professional architect. These experiments have included models in which the students were involved in the preliminary design of real building projects which were later developed and completed by a small select practice run in conjunction with the school. Other models have attempted to provide all the students in the course with the full range of architectural practice experience including construction and on-site supervision. These latter programmes take enormous energy and resources and would appear to be possible only under very special circumstances.

The Schools of Architecture of Montreal, Laval, and Carleton jointly undertook a study in 1970-71 to assess some of these experiments and to develop an appropriate organizational model. The Université de Montréal subsequently experimented with one or two projects and is evolving a practical management technique. Such practices can have interactions with graduate studies and research programmes, and can provide a vehicle for real work experience for both staff and students as well as a vehicle for the development of expertise and experimentation in particular areas.

The Study Group found Eberhard's analysis of the current state of architectural practice and education extremely useful to explain familiar events and attitudes. If we accept his paradigms, and if we accept the notion that the profession of architecture is involved in a change of paradigms, we would expect that those school programmes concerned with the "new" paradigm would be "man-centred", that is, they would be very much concerned with the understanding of human behaviour in all its subtlety, and they would be holistic, integrative,

and process-oriented in their teaching and methodological approach, and they would probably choose real-world, real-client situations as their problem base. Such programmes would automatically require multi-disciplinary inputs including those from anthropology, political science, economics, etc. By contrast, we would expect a programme based on the "traditional" paradigm to emphasize the product, i.e. the well-designed building, and coursework would be heavily weighted towards building technology, design and detailing. As Eberhard points out, the schools in Ontario show tendencies towards both paradigms and confusion follows where they are mixed in one school. Furthermore, he suggests that the transition to the new paradigm is well underway in the profession and will be complete within the next five to ten years, hence by implication the schools should already be transformed in anticipation of the more open definitions of the "architect".

The ASPG discussed at some length the problems of architectural schools in a university context, drawing on background knowledge of other professional schools and professional education in general. There is agreement that the nature and demands of architectural education requires recognition of role-based education and mission-orientation as fundamental to the success of the programmes. The implication of such recognition is that certain activities or patterns of work on the part of the teaching staff, including professional consulting, must also be recognized as an integral part of their duties as full-time faculty members and valid to the considerations of promotion and tenure. One of the consultants, Spring, argues that "architects in the university must not pretend that they work in the scholarly academic model when they cannot in fact do so at this time in the development of the profession". Desbarats' university knowledge system model, (Appendix 2), outlines clearly the appropriate setting for a school of architecture and the relationship between its requirements and those of the conventional academic disciplines. This model reinforces the conclusion of the ASPG on these issues.

A professional architect on the staff of a school of architecture is encouraged to practise architecture in the interests of keeping him in touch with developments in the field. Many architects claim this is as essential to them as "research" is to a scholar. Consulting activities however can and do produce severe complications mostly having to do with conflict of interest arising from the timing of work

and the variability of the workload as it impinges on the quite different rhythm of the academic programme workload. These questions raise the further question of how to monitor the professional work undertaken while an architect is a member of the full-time teaching staff of a university, both to prevent abuse of the privilege on the one hand but also to achieve or guarantee standards and recognition of the work on the other hand.

With the increasing knowledge base required for the field of architecture and the linkages needed to many other disciplines to expand the career-role specializations developing in the field, the necessity for staff development and retraining is becoming more and more acute, as is the need to recruit new kinds of professionals into the field who are able, willing, and interested to make the connection to advanced work in these other disciplines. Desbarats cites the example of the Quebec system of higher education which provides paid leave of absence for staff members as an incentive to go on to do advanced study, while at the same time providing funds for replacement appointments. No comparable programme exists in Ontario.

Discussion of staff development leads inevitably to discussions of the continuing education requirements of the profession. The OAA recently conducted an intensive programme which proved the feasibility and popularity of short courses, but it has not been able to maintain the momentum generated in the initial programme. The universities, on the other hand, have not so far made any serious contribution to this demand area. The potential is there, and could be met by joint action between the profession and the schools, especially if it could be coupled with post-graduate pre-registration course programme development.

The ASPG discussed at length the relation between quality of programme and number of students. Attempting to deal with the problem of the large numbers of applications in this field, the ASPG feels there is a responsibility to provide more places for students but it is frankly concerned about the impact of large enrolments on the quality of education in an already strained resource environment. While some increase in enrolment can perhaps be achieved, no significant increases are possible without increased resources.

The traditional policy of architectural schools to provide each individual student in an undergraduate programme with a work station came under scrutiny as it is the key to expansion in most of the schools. At the same time it is the key to the unique character and ambience of architectural programmes everywhere.

Discussion of this problem led inevitably to discussion of teaching methods in the various studio programmes. It was agreed that alternative formats for teaching studio courses can lead to greater "efficiency" in terms of the utilization of staff and space resources, but the costs and benefits need to be examined in the context of the total programme.

Eberhard argues that the schools are not doing an adequate job of disseminating information at the high school level, and that there is a lack of understanding by the student of the nature of the profession and of the diversity in choice available to them at the different universities in the province. His hope is that with proper counselling, some of the pressure on the architectural schools can be deflected to other programmes.

Since the two new programmes at Waterloo and Carleton universities were started in 1967 and 1968, the three university programmes in Ontario have not been assessed by any of the professional organizations in any formal way. The entry of Ryerson into the field will bring this situation to a head because of its quite different programme. The OAA has, up until now, accepted for purposes of its own recognition of degrees, the list of recognized schools provided by the Commonwealth Association of Architects (CAA) which includes all the other Canadian schools. The listing of these schools is somewhat controversial because they were arbitrarily included without assessment at the time the list was made up eight years ago.

The CAA has recently visited some of these Canadian schools for the purpose of redeciding upon formal "recognition". The CAA appraisal method is to send a group of practising professionals to the schools for a concentrated three-day visit. The visit follows a rigid format supplied by the CAA, to comply with which the schools are asked to prepare material in advance for the Visiting Committee. The American Institute of Architects has a similar method of appraisal using visiting committees and a standard accreditation format.

The OAA is actively considering the problem of how to assess the four Ontario schools. This is a highly controversial subject and new approaches are required.

The key issues then are:

- the distinction between education and training, and the proper environment to facilitate each;

- need for clarification of division of responsibility between schools and the Association, for professional education and training which will define length of programmes, work experience, and registration requirements;

- the disparity between Ontario programmes and registration requirements and those of other countries;

- the phasing out of Grade XIII;

- the integration of instruction with work experience, paid tuition versus paid employment;

- the adequacy of the OAA Registration Course;

- the pros and cons of uniform standards for registration;

- the relevance and implications of the underlying philosophic model used by each school;

- the pros and cons of "project offices";

- the necessity for and right of faculty "architects" to practice and problems therefrom;

- the need for staff development;

- continuing education, mid-career training;

- size versus quality;

- studio format and space requirements;

- programme appraisal;

- better high school liaison.

3.3 Architectural Education in Ontario

University level programmes in architecture are provided in Ontario at: the Department of Architecture, University of Toronto; the School of Architecture, University of Waterloo; and the School of Architecture, Carleton University (Ottawa). A fourth degree programme has been developed at Ryerson Polytechnical Institute (Toronto).

Education in architectural technology is provided in seven programmes at the Colleges of Applied Arts and Technology across the province. These three year programmes produce architectural technologists to meet a different market demand from that covered by the university programmes, providing training for particular service roles in the profession. (See Appendix 7)

The three university schools have formed the Ontario Association of Schools and Departments of Architecture (OASDA) to coordinate their work and to provide liaison with the OAA and the COU. The Association is an affiliate of COU. Although this Association has been functioning for a relatively short period of time it has nevertheless served a very real purpose in improving the level of communication and cooperation among the schools.

The current enrolment of full-time students in the system is shown in the following table:

(Fall, 1974 data)	Toronto	Waterloo	Carleton	Ryerson	Totals
Total enrolment	266	252	288	366	1,142
First-year admissions (intake)	69	66	70	123	328
Expected graduates (1975)	48 BArch	35 BArch	35 BArch		118 BArch
				53 BTech	53 BTech
		47 BES			47 BES

The demand for student places in architecture programmes on the other hand, far exceeds the capacity. In 1974, each of the three university schools received in excess of 800 applications for the 60 to 70 places each has available. Cross-checking of the listings of these applications shows that there are in excess of 1,200 separate applicants attempting to find places in these three programmes.

The entry of Ryerson into the field and its eventual recognition will not alleviate the situation because, despite some cross-listing, the bulk of the students applying to Ryerson are not included in the numbers shown above. On the other hand, this programme generates an additional 53 graduates per year into the pool of potential candidates for registration. Following a detailed assessment of the implications for enrolments of the modifications and changes to the programmes of each of the schools which will be outlined in the following sections of this Report, some decision will be required as to whether the capacity of the whole system needs to be increased and, if so, where best this increase should be located.

At the graduate level, the University of Toronto offers two Master of Architecture programmes with relatively limited enrolment (approximately 10 students). In addition, there are in the province, other graduate programmes in related fields to which graduates from the undergraduate programmes in architecture should have easy access. These include planning and environmental studies at Guelph, Ottawa, Queen's, Toronto, Waterloo, Western and York.

As the consultants to this study point out in their reports, the undergraduate programmes at the present time offer a considerable diversity of choice in approach to the requirements of professional education in architecture with each school seeking to take advantage of the particular resources at its disposal in terms of its location and regional context. The ASPG feels that this is to be regarded as a major strength of the system, and the differences in approach should be heightened rather than diminished as a result of this study.

The key issues then are:

- the viability of the Ryerson programme;

- the role of the architectural technology programmes in the system of higher education for the field of architecture in

Ontario - transferability of CAAT graduates;

- the route to registration for CAAT graduates;
- the appropriate ratio of admissions to applications (at what point is it inadmissible to refuse admission?);
- the manpower needs of the profession;
- the interlinkages between programmes in Ontario, particularly graduate programmes and those in cognate disciplines;
- the adequacy of the present array of alternatives.

3.4 Programmes and Problems

The ASPG reviewed the development plans and documentation supplied by the participating schools and departments of architecture, together with the consultants' reports based on visits to the schools. The Study Group then discussed the intent and direction of each of the programmes, the current problems and proposed solutions as well as alternate strategies for development. The discussions were candid and intensive. The Study Group believes that it now has a thorough understanding of the state of health of the system of architectural education in Ontario.

This section of the Report provides a short description of the programme at each of the schools or departments, and a resume of the key problems with which each is confronted.

3.4 (a) Department of Architecture, University of Toronto

The Department of Architecture at the University of Toronto was situated in a Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. The University has been considering the organizational structure of the Faculty following a series of discussions on this topic and requests from two of the component departments for specific changes. In June, 1974, a proposal was made by the Provost (referred to as the Forster memorandum, Appendix 8) which suggested that the Department of Landscape Architecture be moved to the Faculty of Forestry, that the Department of Urban and Regional Planning report to the School of Graduate Studies, and that the Department of Architecture be attached to the Faculty of Applied Science and Engineering. The ASPG has been advised that the first two of these moves have been agreed upon for implementation effective July 1, 1975, but that the University will delay a decision with respect to the Department of Architecture until the results of this study are known. The Study Group understands that a Special Task Force has been set up to review the recommendations in the ASPG's Report and to recommend specific immediate actions to the University.

The curriculum of the Department of Architecture is based on a fully integrated studio-core programme for the full five years, leading to a Bachelor of Architecture degree, in which all specialized subject material is considered as input to the on-going studio-core problems and in which the staff and the students are engaged. Thus any specialized subject material (for example, in structures) is chosen for its relevance to the requirements of the studio problem and injected at the most appropriate time in the development of it. Such an approach requires the most careful coordination with respect to the choice and timing of inputs, and complete communication amongst the staff and students as to broad objectives and detail.

This programme is unique and has been remarkably successful because of the dedication of a small group of faculty and the extensive participation of the students in the government of the Department. The success, however, has been achieved at the cost of the alienation of a group of the faculty with the result that there is a lack of across-the-board support, less than full participation, and active internal opposition to the programme. In addition, the term of office of the chairman of the Department (who is the driving

force) expires in June, 1976. The University's decision regarding the Faculty has placed the Department of Architecture and especially the protaganists of this programme in a most precarious position.

In the interests of survival, the Department Council produced a proposal which would change the present structure of the programme to a predominantly graduate programme built on top of an entirely new undergraduate programme consisting of two years of liberal arts and two years of a kind of "general" architectural programme with a strong visual design orientation built on the philosophical and pedagogical principles of the current undergraduate programme. It was expected that this new undergraduate programme would have had a wide subscription beyond those students interested in proceeding in architecture, and contribute to the general visual literacy of a wide range of students in the University. The graduate programme was envisaged as a two-year programme built on top of the two-year "pre-architecture" first degree, or alternatively built on another degree. This new graduate programme would have superseded the present Master of Architecture degree.

All the consultants agree on the strength of the present undergraduate degree programme and the remarkable success of this unique experiment. However, they are split on the pros and cons of this particular development proposal. Spring supports the idea of a fully graduate programme in its own right built on any undergraduate degree. The format he envisages is a three-year master's degree programme and this could be similar to the programme at the University of British Columbia, or that at many of the American "Ivy-League" schools. Desbarats feels that the transitional programme must be fully developed before such an undertaking could be embarked upon. He is concerned that the present strong undergraduate programme should not be sacrificed for the sake of moving to this "all graduate" programme. He is highly sceptical of the "general education" visual design oriented undergraduate programme. Eberhard suggests the five-year programme could be cut to four years using the fifth year for a period of work experience, but probably best inserted at the end of the third year.

While the University has taken the decision to disband the Faculty, it has not so far resolved the problem of the final location of the three former component Departments, all three of which will be under separate jurisdictions. As of July 1, 1975, as it now stands, no one of the Departments

has clear responsibility for the existing building and its equipment, etc.

The key problems then are:

- the appropriate reporting arrangement for the Department of Architecture;
- the appropriate organization structure for the Department of Architecture;
- the future of the present undergraduate degree programme;
- maintenance of continuity and leadership;
- the appropriate format and focus of a graduate programme;
- the appropriate re-allocation of the physical plant.

3.4 (b) School of Architecture, University of Waterloo

The School of Architecture at the University of Waterloo opened in 1967 and has gone through a series of reorganizations from its start in the Department of Systems Design in the Faculty of Engineering. It is now a component of the Faculty of Environmental Studies comprised of the School of Architecture, the School of Urban and Regional Planning, the Department of Geography and the Department of Man-Environment Studies. The School of Architecture, however, is located off-campus in a separate building at a considerable distance from the University, and hence does not enjoy the physical proximity which makes for the convenient integration of the course-work and programmes of the other components of the Faculty.

The School offers a two-stage programme in architecture, the first three years culminating in a Bachelor of Environmental Studies (Pre-Professional Architecture) followed by a two-year programme leading to the professional Bachelor of Architecture degree. In addition, the School is organized on a "co-op" programme by which means the students are required to obtain practical experience in architecture or a related endeavour at prescribed intervals interspersed with their educational programme. As a result, the nominal five-year programme takes, in fact, a minimum of six calendar years to complete.

From the information and documented material supplied to it, the ASPG has identified the following major problems which confront the School of Architecture:

(a) As they are now constituted, its programmes of study in architecture are seriously underfunded. This is a most serious problem and one which requires immediate resolution if the School's programmes are to survive and contribute to architectural education in Ontario.

(b) Neither the School of Architecture nor the Faculty of which it is a part, derives the benefits which would be expected to accrue in the working association of many disciplines devoted to environmental studies. There is little integration of the quite compartmented units which comprise the Faculty of Environmental Studies and, of these, the School of Architecture tends to be the most insular. Its isolation, it seems, is based upon the fact that it is a "professional school" with particular needs and procedures which are incompatible with those of the parent Faculty which subscribes to

attitudes and beliefs appropriate to fundamental, university disciplines. That the School is physically removed from its Faculty, accentuates its isolation and makes it difficult for the School to reconcile its programmes and teaching methods with those of the other units of its Faculty.

(c) The Study Group agrees with the faculty and students of the School who contend that the industrial building in which the School is located, in many respects, serves the programme quite well. That is, it is anonymous, is simply and durably finished, is surrounded by land upon which experimental structures can be erected and, most importantly, is readily adaptable by simple means to accommodate the changing demands of studio and research programmes of the School. However, the physical facilities of the School - general accommodation, equipment, special services, etc. - are mean, inadequately serviced, poorly maintained and incapable of adequately accommodating all of the students now registered in the School's programmes. The Study Group is also concerned about the School's location off the university campus and at a considerable distance from the other Faculty units which are housed on campus in a building assigned to the Faculty of Environmental Studies.

Now that this study has revealed the short-comings, the School is in a position to start planning, but the Director's term ends in June, 1976, and he has indicated that he does not wish to be reappointed. The situation is therefore very serious indeed. The consultants to the ASPG have been particularly critical of the situation at the School and have gone as far as to suggest that if it is not corrected very soon the programme should be discontinued. They have proposed some revision of the length of the programme which may alter the timing and duration of the work experience cycle, but its intrinsic value is recognized.

The key problems then, for this School, are:

- the relationship with its parent Faculty and the University;
- the appropriate form of the undergraduate and graduate degree programme as affected by the relationship to the Faculty or other alternate organizational modes;
- funding and staffing;
- the adequacy and location of its physical plant.

3.4 (c) School of Architecture, Carleton University

The School of Architecture at Carleton University was established in 1968. It is a relatively independent unit in the University, with academic autonomy (reporting to the Senate via its own Faculty Council). The Director reports to the President on administrative matters through the Dean of Engineering.

In 1973 the University established a School of Industrial Design, the programme of which is fully integrated with that of the School of Architecture and the Faculty of Engineering. The result of this move is that the two schools, together with the Faculty of Engineering, form the nucleus of a federation of professional faculties, the spokesman for which is the Dean of Engineering.

The School of Architecture offers a five-year undergraduate programme leading to the Bachelor of Architecture degree. The first two years of this programme are mandatory and are common to all students. The next three years provide for a wide selection of electives within a controlled framework, aimed at providing the student with the opportunity to "major" in architecture and "minor" in a specific area of interest within the broad field focussed on some specific career objective (e.g., urban design, programming, building science). By this means the School attempts to provide the student with the opportunity to develop an area of concentration at the undergraduate level which could lead eventually to graduate study and specialization.

While the intent of the programme has been to offer a multiplicity of choice for the student, the programme as delivered has not met expectations. Such a programme requires a multi-disciplinary staff. It was intended that this would be recruited by shared appointments with other disciplines in the University as well as by appointments directly within the School. In fact, however, the demands of the studio programme (as presently conducted) have utilized the bulk of the staff resources and it has not been possible to develop the shared appointments hoped for from other components of the University. The net result is that the expected range of diversity has not materialized. The School brought forward a Development Plan which outlined a solution for this problem the scope of which included a proposal to develop an alternate undergraduate degree programme in environmental

design with options parallel to the minor stream programmes in architecture, which then could be used jointly by the two programmes. The consultants advised that this strategy was not practical and suggested that the desired objectives could be achieved within the framework of a modified Bachelor of Architecture degree programme, provided the staff resources were redistributed and the studio programme was made more efficient with respect to the utilization of staff resources and physical plant.

The key problems then appear to be:

- redistribution of the use of available resources;
- the conflict between the curriculum objectives and the programme as delivered;
- the studio space-use policy which is blocking expansion.

3.4 (d) Department of Architectural Science, Ryerson Polytechnical Institute

Following a major reorganization, renaming, and a move to a new downtown campus in 1964, Ryerson Polytechnical Institute was given degree-granting powers in 1971. The same year, the Department of Architectural Technology was given approval to proceed with the development of a four-year degree programme leading to the degree of Bachelor of Technology (Architectural Science). The first class from this new programme graduated in June, 1975.

The curriculum is common to all students for the first two years, but in the third and fourth years they major in architechture, building science or project management. The students all receive the same degree, BTech (Architectural Science). A change in the degree designation is under consideration.

In addition to the above programme, the Department of Architectural Technology offers a diploma programme in landscape architectural technology of three years duration which it is in the process of converting into a four-year degree programme in landscape architecture. It is visualized that the first students will emerge from this revised programme in June, 1976. The Department also offers an evening programme which consists of a one-year concentrated course in construction management which is available to students who have a three-year diploma in architectural technology. Graduates from this special programme are awarded a Bachelor of Technology (Construction Management). The Department also offers an evening programme in architectural technology leading to a Certificate in Architectural Technology.

The current (fall, 1974) enrolments in the degree programme only are shown in the following table.

Day

Year	1	2	3	4	Totals
Architectural Science	123	84	76	53	336
Construction Management				30	30 FTE
					366

As this programme has developed there has been a clear expectation on the part of the Department that their graduates in architectural science would be considered to have met the educational requirements for registration in the Province of Ontario. They cite examples where diploma graduates in architectural technology have completed degree programmes in architecture in American schools in two years, and have been awarded registration in Ontario (after suitable work experience) on their return. In addition they claim the programme more than meets the requirements of the RAIC Minimum Syllabus which is recognized in other parts of Canada as an appropriate preparation for registration. The programme has been strengthened considerably by upgrading from the former three-year technology programmes, and by making substantial changes in content. However, the overall staff/student ratio at approximately 1:17 (based on 26 FTE's for 477 students over the whole department) and the operational budget is considerably lower than that of the other architectural schools.

The curriculum has developed a strong professional practice orientation and this is well understood by the staff and the students, and the programme is efficient in the focus of its curriculum and resources. The consultants all agree that the four-year programme is or should be adequate to meet the basic educational requirements of the profession and they all feel that Ryerson should be recognized accordingly. They did suggest, however, that the social sciences and humanities inputs to the programme need to be further strengthened, the orientation of the studio programme needs to be modified, and the final year of the programme strengthened. One consultant suggested a time delay before full recognition in order to achieve these modifications.

The key problems that emerged are:

- recognition of this programme by the OAA and the university schools and departments as a university-level programme and the determination of the status of the current graduates of this programme with respect to the registration requirements currently in force;
- improvement of the level of staffing and funding;
- recognition of Ryerson graduates as eligible for admission to graduate programmes in other schools of architecture in Ontario;
- assuming recognition for the Ryerson programme determination of the impact of the 50+ graduates per year as candidates for registration in Ontario, in addition to the 120+ graduates from the other three schools;
- determination of the appropriate direction for development of this programme.

4. FRAMEWORK FOR ARCHITECTURAL EDUCATION IN ONTARIO

Following the identification of issues and key problems in the preceding section, the ASPG focused its discussions on the three groupings relating to professional, educational and other (predominantly administrative) matters. The discussions were extensive, based on a number of position papers presented by members of the Study Group, as well as on the consultants' reports and other data. The recommendations in this section are comprehensive and cover matters affecting all the components of the system. As such they provide a "framework" for architectural education in Ontario.

4.1 University/Profession Interface

In a context where university education is accepted as the single dominant route "into" a profession, the interface relationship between the profession and the universities is complex, and many issues emerge. Most generally, these issues revolve around the identity of the profession of architecture in terms of its component elements and the underlying conflict of the two "paradigms" of the profession, as discussed by the consultants to the Study Group (Eberhard especially: Appendix 3). In greater particular, these issues emerge in Ontario in terms of: the differences between education and training; the cumulative requirements for registration for practice in the profession; the nature and length of formal educational programmes in the universities; the work experience requirement for registration; the OAA Registration Course.

The ASPG accepts the notion that the "profession" of architecture consists not only of the practitioners in the profession but also the educators, and a third "hidden" constituency: the "almost" architects (those who have nearly qualified for registration and those who without formal qualifications are, nevertheless, deeply involved in this field).

Confusion of responsibilities tends to arise primarily between the practitioners and the educators. The confusions are partly conceptual and partly historical. Conceptually, the confusions come not only from the intrinsic differences between the two paradigms of the profession, but also from a lack of clear-cut principles of division of responsibility, given one or other of the paradigms. Historically, a university degree in architecture has been seen to be the route into the practice of the profession; and until recently there has been only one university programme in architecture in Ontario, at the University of Toronto. The conflicts inherent in a single route into practice are more apparent now that there are several university programmes in the province. On the one hand the practitioners want not only to evaluate the professional competence of the graduates of the university programmes for admission to the OAA, but also to have a say in determining the entire educational experience leading up to the degree, and feel rebuffed and slighted when they are told by the educators that education is the business of the universities and not the OAA. On the other hand the

educators not only want to determine the nature of the educational experience for their students, but also want to influence the nature of practice and feel rebuffed and slighted when they are told by the practitioners that practice is the business of the OAA and not the universities. Educators and practitioners both want to influence the present and future nature of the profession, but find it difficult to determine appropriate roles in participating together in the process.

This section of the Report addresses the anomalies that arise from this confusion of roles. Proposals are included for clarification of areas of responsibility in the total process of education, work experience, examination, etc., for the definition of alternate routes through the process, for the development of an appropriate organizational structure, and for the development of educational opportunities to move towards specialization to meet the needs of an increasingly complex profession.

4.1 (a) Time Requirements

Issues of the cumulative time requirements for professional education in architecture and for registration as a practicing architect revolve around basic questions: what age/education base should be the starting point in the process; how much time should be required to master the basic substance of the field; what should be the minimum period required to achieve the requisite maturity to join the profession?

The ASPG believes that, although there are no clear-cut answers to these questions, they can be addressed at several levels. The Study Group believes that it is necessary to sort out the "how and why" of education and the "how" of training. In undergraduate university education in the subject of architecture (the essential "why") should be the basic preparation, followed by a formal professional education (the "why" and the "how"), followed in turn by a period of training to add the final "how" before entry into practice.

Undergraduate architectural education as determined by the universities can and should vary considerably in nature and length, depending upon the particular programme of study. The ASPG agrees with the prevailing trend in Ontario toward accepting grade 12 (or even grade 11) as the appropriate matriculation requirement for the educational opportunities represented by the universities of Ontario. The Study Group believes that a valid undergraduate programme in the subject of architecture could be as short as three years and might be as long as five, depending upon the peculiarities of the university involved.

The ASPG believes that professional education in architecture should be at the graduate level, on the grounds that a professional education can be founded only upon a sound general (liberal) education, which in this era can best be acquired by means of an undergraduate university experience. At the graduate level, the Study Group argues for a "norm" of one calendar year for a professional programme leading to the degree Master of Architecture, having a basic integrated curriculum offered by all of the participating universities. The admission requirement should be an undergraduate degree in the subject of architecture and the graduate programme should culminate in a professional qualifying examination. The ASPG is persuaded that, as the basis for variation and specialization responding to the complexities of the field

of architecture, there is a valid common foundation for the discipline and profession of architecture, to be reflected in this graduate professional education.

The ASPG also believes that this route of graduate professional education in the university context should not be the only route into the practice of architecture (membership in OAA), although the Group is convinced that the university route should be the normally expected and, indeed, the preferred route into the profession.

In addition to these formal educational requirements at the university level, the ASPG recommends that two years in approved and "logged" work experience, concluding with an oral examination of professional ethics, be required for registration to practise as an architect in Ontario.

Assuming a "norm" of four years for the undergraduate degree, the Study Group is therefore recommending a total time requirement of seven years from university matriculation to registration as an architect, which is one year less than the minimum now required. The consultants to the ASPG argue for even shorter time requirements, and in other countries the overall time requirement would appear to be less. However, the comparison of time requirements for registration as an architect in Ontario with the requirements in the United States and the United Kingdom reveals that the present time requirement in Ontario, while seeming to be greater, is in fact less. (See Section 3.2 of this Report.) Whether the requirements in Ontario should be brought "more in line" must be viewed in two contexts: (a) although attempts by professional organizations to influence the conventions of the Canadian/Ontario university "academic year" have had some success (cf the Law Society of Upper Canada) such efforts on behalf of architectural education might be unacceptably costly in terms of the desirable integration of architectural education with other parts of the university system; and (b) the suggested overall period of seven years does not appear to be unduly long for the personal development and maturing process believed to be needed for the profession of architecture. This latter point is not to deny that maturity is not necessarily related to chronological age and that persons short in years are often long in judgment and maturity. It is important to offer the opportunity to seek entrance into the profession at an early age, on the basis of demonstrated professional compentence and maturity of judgment.

In short, the ASPG is recommending the replacement of what is now seen essentially as an instantaneous act of entry into the profession, encumbered by undue confusion of the purposes of extended formal educational experience leading up to that moment, with the purposes of intelligent future intervention in the practising world. The proposed replacement is an explicit education/practice experience during an explicit period of one calendar year for which the responsibility is shared by the educators and the practitioners, which would be preceded by an educational learning experience determined by the practitioners, all of which is intended adequately to prepare the individual for entry into the larger profession of architecture. As proposed by the ASPG, the requirements would constitute new forms of experience in different proportions within a shorter time-frame than presently exists. (See Figure C.)

In summary then the ASPG recommends that:

R-1 The universities and the OAA recognize three distinct areas of responsibility with fundamentally different characteristics, relating to the determination of the total requirements for registration in the OAA as follows:

(a) formal education in the subject of architecture where the responsibility is clearly within the jurisdiction of the universities;

(b) work experience in the practice of architecture which is clearly under the jurisdiction of the OAA;

(c) the intermediate area where integration of knowledge in architecture and the practice of architecture is of direct legitimate concern of both the OAA and the universities.

R-2 Assuming a "norm" of four years for the undergraduate degree, the universities and the OAA agree that the minimum total time requirement to registration as an architect in Ontario be reduced to seven years.

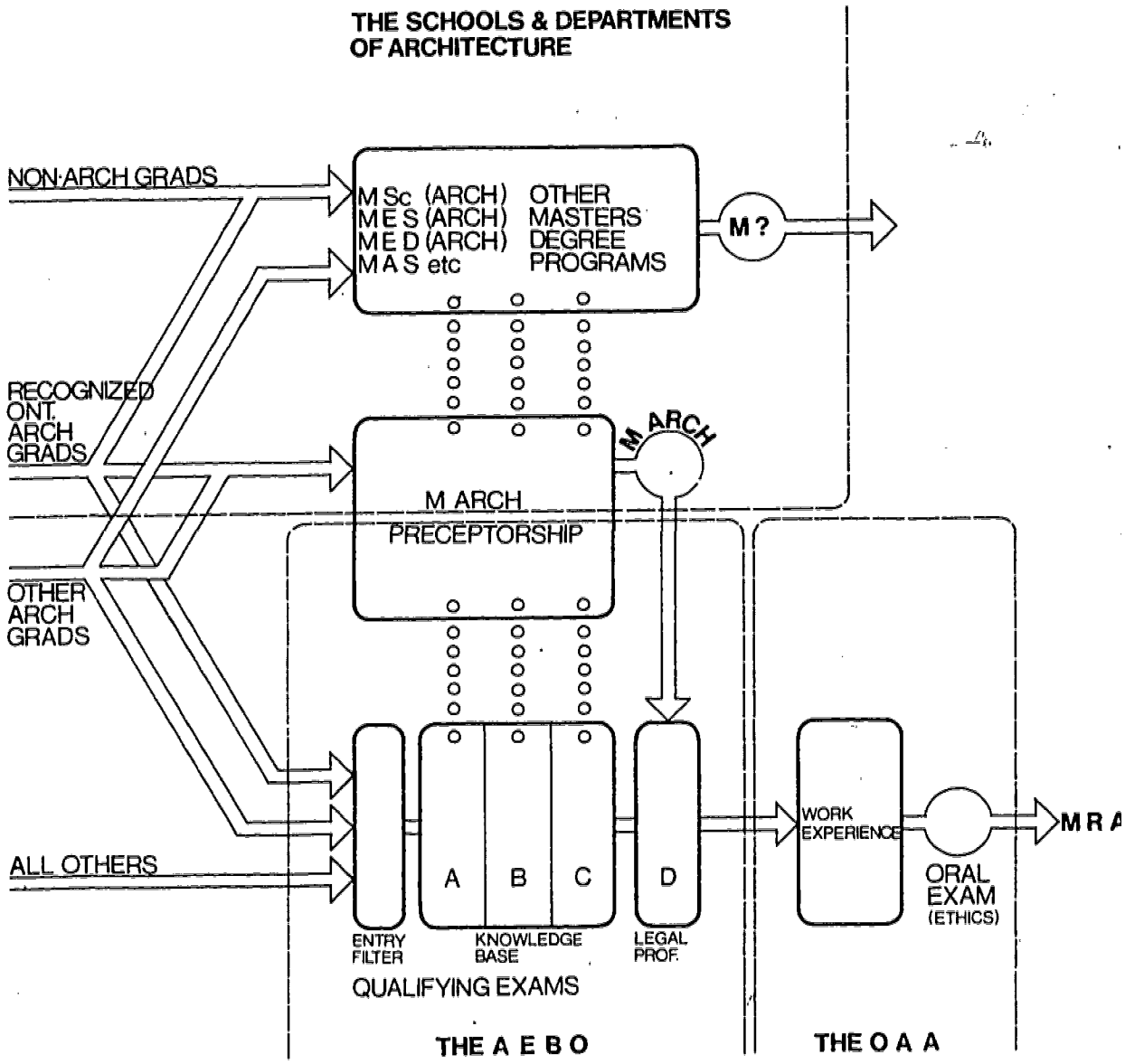
4.1 (b) The Architecture Education Board of Ontario

In the present situation, it is quite unclear as to how far into the university programmes the OAA should penetrate and to what extent the universities should influence the formal registration process. Without diminishing the larger responsibilities of the universities for education and the larger responsibilities of the OAA for the governing of the practice of the profession, what is clearly needed is a joint body which would be responsible for that part of the process whereby a student would go from the general education base of an undergraduate university degree in architecture to the point of entry into the work experience phase required for formal registration as an architect. (See Figure C)

The ASPG therefore recommends that:

R-3 The OAA and the universities in Ontario with architecture programmes enter into a formal agreement to establish an Architectural Education Board of Ontario (AEBO) acting in the area of joint responsibility on behalf of the universities and the OAA.

FIGURE C


THE SCHOOLS & DEPARTMENTS
OF ARCHITECTURE
NON-ARCH GRADS
M Sc (ARCH)
M E S (ARCH)
M E D (ARCH)
M A S etc
OTHER
MASTERS
DEGREE
PROGRAMS
M ?
RECOGNIZED
ONT.
ARCH
GRADS
M ARCH
M ARCH
PRECEPTORSHIP
OTHER
ARCH
GRADS
ALL OTHERS
A
B
C
D
WORK
EXPERIENCE
ORAL
EXAM
(ETHICS)
M R A
ENTRY
FILTER
KNOWLEDGE
BASE
LEGAL
PROF.
QUALIFYING EXAMS
THE A E B O
THE O A A

4.1 (c) Master of Architecture/Preceptorship

The Master of Architecture programme is seen by the ASPG as a programme of professional education in architecture offered commonly by all of the participating universities in association with the OAA, through the AEBO This proposal would in no way inhibit the offering of a variety of other graduate educational opportunities in the subject of architecture - the distinction lies in the professional as against the scholarly focus. Indeed, the ASPG envisages a very substantial increase in the opportunities in Ontario universities for graduate work in the broad field of architecture, as reflected in other parts of this Report.

Entry into the graduate professional programme in architecture would be through each university individually and would be available to candidates holding undergraduate degrees (in architecture) "recognized" by the AEBO. By initial agreement, AEBO would recognize the undergraduate degrees in architecture of the participating universities. Early tasks of the AEBO would be the evaluation for recognition of degrees in architecture offered in the other provinces and the establishment of principles for the ad hoc recognition of foreign degrees held by applicants to the programme. It is recommended that these principles be based on "performance criteria" rather than on conventional subject listings and time requirements.

Prospective students would apply for admission to the graduate programme at the university of his/her choice and be accepted or rejected in accord with the normal procedures of that university. Students would normally enter the programme in the fall term. During the programme the student would be enrolled as a full-time or part-time student as determined by the university and would pay regular tuition fees to the university. The degree would be awarded by the university in which the student is enrolled. The normal period of full-time study for the degree would be twelve months, but the university could seek the approval of the AEBO for the award of advanced credit and exemption from some of the degree requirements in individual cases, on the basis of previous education and experience.

Based on the principle that there is an appropriate common professional base upon which to build diversity, the proposed graduate programme of study consists of two elements: (1) a common "preceptorship" programme of integrated field and

classroom experience; and (2) specialized study whose nature would vary from university to university in accord with the particular resources and interests of the university in which the student is enrolled. The preceptorship programme would represent approximately three-quarters of the overall time requirements of the Master of Architecture programme and would be determined by the AEBO. The specialized study would be as determined by the university subject to approval and monitoring by the AEBO to ensure that the requirements of the programme in general and the preceptorship in particular are fully respected. The precise proportions of the different experiences would be subject to negotiation between the university and the AEBO.

The programme at each of the universities is intended not only to provide the opportunity for students and faculty members to develop special approaches and to focus in particular areas of concern but also (and more important) to provide the essential style and philosophical framework for the programme of professional study. It must be understood that the Master of Architecture programme would be subject to the jurisdiction of each university offering the degree, through its normal governing processes, with the added dimension of negotiation with the AEBO for its approval (and monitoring) of the programme that is put into place. The nature of the agreement between the universities and the OAA for the establishment of the AEBO is therefore vital to the success of this venture.

The preceptorship programme would have three parts: (1) lectures/seminars; (2) field experience; (3) integrative practice/theory tutorials. The programme would be determined in detail by the AEBO in consultation with the universities. This programme would then be offered by the universities and organized in modules built around specific subject areas, (e.g., technical, legal, business and management, etc.). The modules could be of differing length but each would probably need to be a minimum of two weeks duration.

A typical module might consist of a series of lectures on a particular subject area, given by an expert in the particular field involved. Lectures would then be followed immediately by a related field experience and office-based tutorial in which a group of students would meet with a tutor. The tutor would be employed in a practicing office and would be selected for his particular experience in the application of the material in the working media of the office. The student group would be on site in the office or

in the field with this tutor for a prescribed period of time, exposed to the direct application of the lecture material to the daily practice of the architect.

The total package of modules should be available within the twelve-month period, and within commuting distance of each of the participating universities. A team of lecturers might be established to move around the province to give specific module inputs. These lecturers would be drawn from the universities involved and from government and industry and from architectural practices according to the specialist expertise required. The tutors, on the other hand, would be practitioners in architectural offices and the construction industry in the regional centre.

A student could take the whole package of modules in a concentrated twelve-month period or spread them out over a longer period of time. In the latter case, he would enrol as a part-time student in the university and combine the educational experience with part-time employment.

In summary then the ASPG recommends that:

R-4 The participating universities (as in R-3) offer a 12-month professional Master of Architecture programme, consisting of:

(a) a common "preceptorship programme" of integrated field and classroom experience, and

(b) specialized study whose nature would vary from university to university in accord with the particular resources and interests of the university in which the student is enrolled. The "preceptorship" would be as determined by the AEBO; the specialized study would be as determined by the university subject to approval and monitoring by the AEBO.

R-5 Entry to the professional MArch degree programme would be through each university individually. It would normally be available to candidates holding undergraduate degrees (in architecture) "recognized" by the AEBO.

R-6 Initially, the AEBO "recognize" the undergraduate degree programmes at the participating universities in Ontario, and that it then evaluate for recognition degrees in architecture offered by other jurisdictions in Canada and elsewhere.

4.1 (d) Alternatives

In these proposals, the ASPG recommends two basic hurdles to registration for practice as an architect in Ontario: the written Qualifying Examination and the oral Professional Ethics Examination (which, as discussed in the next section, would constitute the OAA Registration Examinations).

The proposed basic route to prepare for these hurdles is to consist of three parts: (a) the graduate professional master's degree programme in architecture, following (b) a general undergraduate degree programme in architecture and leading to (c) a two-year period of professional work experience.

The ASPG recognizes that there are many well-suited persons who are not able to pursue the formal university route to professional qualification, even on a part-time basis. The Study Group therefore proposes that alternative routes to these hurdles to registration be acknowledged, in order to provide the broadest possible accessibility to the practice of the profession within the constraints of the social responsibilities of the OAA and the universities.

These routes could include:

(a) acceptance of selected graduates from the CAAT programmes in architectural technology and from counterpart programmes in other provinces, either with advanced credit into the university undergraduate programmes, or into an advanced stage of an OAA "apprenticeship" programme;

(b) selective acceptance into any or all of the various streams (see Figure C) toward professional qualification of persons from cognate design professions and disciplines (e.g. landscape design, interior design, environmental design);

(c) selective acceptance into any or all of the various streams (see Figure C) toward professional qualification of persons from other disciplines such as urban studies, planning, and environmental studies;

(d) development of an apprenticeship programme in the classical mold, designed by the OAA and offered by its members, whereby a young person would enter a period of indentureship to an architectural

practitioner and, under that tutelage, acquire the requisite basic knowledge for practice (although it is not expected that large numbers of prospective architects would burden this route);

(e) in relation to all of these routes, particularly the apprenticeship route, the active development of "open" opportunities for non-university students to obtain guided instruction in architecture from practitioners and educators in specially created settings such as are found in the Open University of Great Britain and the Boston Architectural Centre in the United States.

The common denominator of all these alternative routes would be the proposed OAA Registration Examinations and work experience requirement. (By inference, it should be possible for a candidate to take the Examinations without having followed any of the routes identified above.) Regardless of the preparatory route, every candidate to enter the OAA work experience programme would be required to pass the Qualifying Examination of the AEBO.

The students in the MArch programme would have an obvious advantage in meeting this requirement as an integrated component of the graduate degree programme. For other candidates, it would be necessary for the AEBO to introduce a measure whereby it would determine whether or not the individual possessed the necessary general education in architecture (equivalent to an undergraduate university degree, no matter how acquired) seen to be needed for admission to the privilege of taking the substantive Qualifying Examination. Beyond the Qualifying Examination, the requirements for registration would then be common for all candidates regardless of their previous preparation.

In the context described, broad opportunities for access to the profession of architecture would at least be offered, no matter to what extent those opportunities might be seized. It should be noted that the ASPG is not suggesting that the OAA relinquish its right to admit anyone directly into membership should it wish to waive any or all of the various requirements.

The ASPG therefore recommends that:

7 Alternate routes to registration in the OAA be made available to persons who do not have the qualifications for entry to the professional MArch degree programmes offered by the participating universities, and that these alternatives be entirely under the jurisdiction of the AEBO.

4.1 (e) Registration Examinations

The registration examinations consist of two parts, a Qualifying Examination and a Professional Ethics Examination.

During the MArch programme the student would be subject to guidance and examinations as determined by the university for its measurement of the student's progress. In addition to such measurement by the university, the student, in order to obtain the MArch degree, would have to pass the Qualifying Examination established and administered by the AEBO on behalf of the universities and the OAA. The Qualifying Examination would cover the basic requirements for entry into the profession as determined by the AEBO. The examination would seek to determine that the student has the requisite mastery of the knowledge base of architecture and the necessary skills in architecture and the capacity to synthesize both, in order to enter the final work experience phase in preparation for registration to practise.

To obtain the M.Arch. degree the student would have to pass both the university's examinations and the AEBO Qualifying Examination. However, only the Qualifying Examination would determine admissibility to the work experience phase of the OAA registration requirements.

The Qualifying Examination would differ in its form (but not in its substance) for students in the Master of Architecture programme and for candidates from one or other of the proposed alternate routes for entry into practice (see Section 4.1 (d)). The Qualifying Examination for the Master of Architecture students must be integrated into the twelve-month experience of the university programme and form an essential element of that experience. The Qualifying Examination for other candidates must be available as "an examination" to be seen as a single requirement. The Qualifying Examination should consist essentially of three parts:

(a) an entry "filter" which would not apply to enrolled Master of Architecture students but which would be needed to identify other appropriate candidates;

(b) a set of "knowledge-base" examinations which would be integrated into the Master of Architecture programme for enrolled students but which would constitute a single formal hurdle for other candidates; and

(c) a professional practice/legal examination which would be a common hurdle for students in the Master of Architecture programme and for the other candidates.

After the two-year work experience requirement, the OAA should administer an oral Professional Ethics Examination. As the final formal requirement for registration to practise as an architect, this should not be an examination of formal knowledge, but rather a determination of the fitness of the candidate to enter the practice of architecture, by testing understandings of social and ethical responsibilities as the final measure of that fitness. This examination, together with the AEBO Qualifying Examination, would then constitute the Registration Examinations of the OAA.

In this proposal, it must be clearly understood that, on the one hand, the universities would be explicitly delegating authority to the AEBO to examine students as part of the requirements for the Master of Architecture degree and, on the other hand, the OAA would be explicitly delegating authority to the AEBO to determine the eligibility of the candidate for entry into the professional work experience programme for registration to practise. In this way, many of the present ambiguities of responsibility would be dissipated.

In summary then the ASPG recommends that:

R-8 The AEBO develop and administer a Qualifying Examination consisting of three parts:

(a) an entry filter to determine eligible candidates other than those enrolled in the professional MArch degree programmes;

(b) a set of "knowledge base" examinations which would be integrated with the professional MArch programme but which would constitute a separate hurdle for other candidates;

(c) a professional practice legal examination which would be mandatory for all candidates.

R-9 The OAA Registration Board develop and administer an oral examination on the subject of professional ethics to be given on completion of all other requirements for registration.

4.1 (f) Work Experience Requirement

Following successful completion of the preceptorship programme (and the award of the MArch degree) the candidate for membership in OAA would then be obliged to acquire work experience in a professional employment context under the direction of a registered architect. This phase should be entirely under the jurisdiction and administration of the OAA. The Study Group recommends that the normal requirement of work experience should total two years, acquired either continuously or in interrupted periods. This represents a reduction of the present three-year requirement. The OAA should establish and publish the criteria for those experiences that it would approve for this purpose and establish rules whereby at least some of the experience could be accumulated during completion of the preceptorship programme as well as before entry into that programme. The work experience should be recorded in an individual log book much as is currently required.

The ASPG recommends that the present OAA registration course and examination be disestablished as soon as the alternate mechanisms are in place.

The ASPG therefore recommends that:

R-10 The period of work experience required within the recommended minimum seven year total period to complete registration requirements (see R-2) be two years, acquired in one continuous period or in interrupted periods after completion of at least three years of study in architecture, and that at least one year of the required work experience be completed in the office of a registered architect practising in Ontario.

R-11 The OAA phase out the present OAA Registration Course and other requirements as soon as these new mechanisms are in place.

4.1 (g) Accreditation

There is considerable confusion in the use of terms to describe the various processes for determining the acceptability of university programmes and for their subsequent monitoring. For its purposes, the ASPG defines the various terms as follows: the processes of (a) "appraisal" of academic quality and (b) "assessment" of feasibility, may be employed for the acts of (c) "approving" a programme of study, and (d) "recognizing" a particular degree, and (e) "accrediting" an institution (school, department, etc.).

The ASPG therefore recommends that:

R-12 The AEBO be charged by the OAA and the participating universities with the responsibility for establishing a continuing programme of monitoring the university programmes in architecture. This mandate should include:

(a) determination of criteria for "recognizing" undergraduate degrees for the purpose of admission into the MArch (Professional) programme; publication of a list of recognized degrees (including degrees from universities outside Ontario); review and revision on a regular basis of the list of recognized degrees; consideration of individual applications for recognition of degrees not on the list;

(b) conduct of an "assessment" in collaboration with ACAP and OCGS of the proposed individual Master of Architecture programmes for the purpose of assisting the universities in introducing the programmes in a systematic and orderly manner;

(c) determination of a process for continual "appraisal" of each of the Master of Architecture programmes for the purpose of "accrediting" the university to offer the programme with authority to require modification of any requirements of the degree programmes when considered necessary for the overall welfare of the preceptorship programme.

4.2 Educational Issues

In one of the previous sections of this report (Section 3), the ASPG identified a number of educational issues that it felt were of sufficient importance to warrant separate discussion in order to propose general recommendations affecting all the schools. Accordingly the consultants were asked to comment on them as well.

The most important of these issues is the direction and extent of graduate studies and research that will be required in the next decade to provide the knowledge and skills to keep the profession up-to-date and at the leading edge of developments affecting the practice of architecture under the dynamic social, economic, and political conditions we can expect in that period.

Related problems include contract research and consulting activities, workloads, teacher training, and instructional developments, continuing education and mid-career training. The ASPG has studied each of these issues and this section of the Report outlines the main topics discussed leading up to specific recommendations which are included.

4.2 (a) Graduate Studies and Research

Having argued the case in the previous section for the clear separation of general education at the undergraduate level from professional education via a special graduate programme, it remains to discuss the potential of graduate studies and research activity to broaden the knowledge base of the field of architecture through fundamental research and the application of that knowledge to problem-solving situations in the field. The present situation in Canada can only be described as an opportunity area as there has been, so far, very little concerted effort to develop graduate studies and research in architecture in the Canadian schools. Activity so far has been primarily ad hoc, with some notable recent exceptions, such as the work at McGill by Ortega's group on low-cost, minimum energy housing.

There are a number of reasons for this, the most significant being the fact that there has been little systematic investigation of the knowledge base of the field until very recently, if one takes as evidence the publications in the field. Architectural journals contain mostly photographic essays on current buildings. Articles on theory or even technical topics are few and far between, and tend to be journalistic rather than scholarly in approach. There is no such thing as a "refereed" journal on architecture in Canada, and only one in Britain and the U.S. that we know of, the Journal of Architectural Research, which has just started. This poses an interesting question as to whether the work creates the journal, or the journal creates the work.

Work in related areas has a better chance of finding a publisher. For example, work on the application of socio-behavioural science information to built environments, is published in the U.S. by the Environmental Design Research Association (EDRA), which has had a strong catalytic effect. Work on methods is published by the Design Methods Group (DMG), also in the U.S. There are several journals serving the planning and urban design fields.

Some of the most interesting fundamental research in

the field is being carried out by a loose network of scholars at the University College (London), Cambridge University, and Berkeley, attempting to define the "discipline" of architecture and to develop quantitative methods of analysis in the field. None of the Ontario schools of architecture are participating in this work.

Rather than attend graduate programmes in architecture here, graduates have been frequently encouraged to go outside the province to pursue graduate studies after a period of work experience. They have tended to go to the large American "Ivy-League" schools which are in close proximity. These schools attract a wide international cross-section of students with outstanding credentials and carry a highly prestigious degree. Their programmes, until recently, have been based on one-year design-oriented formats which represent an extension of the kind of undergraduate programmes in architecture we have seen in the last ten years. None of the Ontario schools has been able to, or indeed has attempted to, match the highly prestigious staff resources that these programmes were based upon. The interest in this type of programme appears to be waning, partly because of the paradigm shift referred to elsewhere in this Report but more particularly because the students are now seeking much more diversified educational opportunities in preparation for practice in the field on their own terms.

If the profession of architecture is to survive and to maintain its vitality, it should be obvious that systematic work is needed on the development of the knowledge base of the field over the encyclopedic range of subject areas that relate to the built environment. The ASPG is indebted to Guy Desbarats for his contribution to this study on this topic (see Appendix 2). The Study Group is concerned, therefore, that over the next development decade a full programme of graduate studies and research covering the spectrum from fundamental research to applied and mission-oriented research be developed within the Ontario system.

This implies that a systematic investigation of the support base for graduate studies and research is also required. Support for fundamental research will come primarily from federal and provincial government agencies such as the Canada Council, the Humanities

Council, the National Research Council, and the Central Mortgage and Housing Corporation, each of which has specifically defined subject areas it is interested in. To achieve any significant support in these areas research proposals would probably have to be multi-disciplinary or inter-disciplinary. The current federal government policy on support for scientific research indicates a clear trend towards mission-orientation and support for projects involving "technological transfer". There is a considerable potential here for the architectural schools.

Probably the most open-ended opportunities lie via contract research by which means faculty from the schools can participate directly in problem-solving joint-ventures with practising professionals, particularly on work for the various levels of government. This work has the added attraction of establishing the credibility of the faculty member while at the same time defining potential areas of applied or fundamental research arising directly from areas of concern in practice.

One of the constraining factors on the development of graduate studies may well be the lack of financial support for students. At the present time only one major programme of student fellowship support exists in the environmental design field, one sponsored by the Central Mortgage and Housing Corporation. To qualify, architectural students would be in open competition with students entering the planning field or other environmental studies programmes. So far, the participation by architecture students in these fellowship competitions has been relatively small and this, to some extent, may reflect a lower level of academic achievement relative to other disciplines.

The reduction of the length of the undergraduate programmes suggested elsewhere in this report will make graduate studies more attractive in this field to students from Ontario. Careful recruitment and selection of students will be required to obtain a balanced mix. These problems must be solved simultaneously with the build-up of new programmes.

For the Ontario schools to seriously get into graduate studies a period of concerted planning and a systematic build-up of resources will be required. In the first

instance, the schools would have to define very clearly an area of study they wish to develop, then systematically build up the library holding to support this work as well as the staff qualifications and credibility in this particular area of specialization. While this is going on, the schools should begin a systematic development of research programmes aimed to pave the way to graduate studies in the particular subject area of interest. Towards this end, linkages with other areas of strength in the universities will be required, and joint activities should be encouraged.

The ASPG agrees that the Department of Architecture at the University of Toronto probably has the earliest opportunity to develop a strong graduate programme as it has already established the degree, but the Study Group does not foresee significant increased enrolments before three or four years. The Study Group urges that Department to start immediately to develop a mission for and to rebuild its graduate degree programme.

Following a period of consolidation and reorganization, the schools at both Carleton and Waterloo have considerable potential for graduate studies development, but it could probably not be realized within the next five years.

Carleton's opportunity probably involves programmes directly related to federal government interests and hence could include any or all of areas of specialization related to pre-design programming and planning, policy development, administration, property development, urban design, applied building science. To develop capability in these areas consideration should be given by the University to coordinate research activities between a number of professional departments such as engineering, law, public administration, social work, economics, and political science, and it may not be necessary to have a separate degree programme in architecture at all.

Waterloo has the potential to develop specialization relating architecture to landscape and environmental science interests, as well as specialized work in computer-aided design. Similar efforts at coordination should be encouraged here to realize this potential before separate degree programmes are considered.

The Study Group is of the opinion that when Ryerson develops its professional degree programme that a limited range of research in support of specific professional specializations could be developed but these would not necessarily lead to graduate programmes beyond the MArch (Professional) degree programme discussed in the preceding section.

The ASPG feels that graduate activities of the kind discussed here will enhance and expand the range of diversity across the system in Ontario.

In summary then the ASPG recommends that:

R-13 The Schools and Departments of Architecture in Ontario, over the next decade, develop a programme of graduate studies and research covering the full spectrum from fundamental research to applied and mission-oriented research.

R-14 To achieve this goal, the Schools and Departments should decide upon a clear mission and start now to plan a systematic build-up of resources and research activity in the particular area of study selected.

R-15 OASDA monitor and coordinate this work, liaise with COU, OCGS, ACAP and with the Faculties and Schools of Environmental Studies and Planning in Ontario in order to enhance and improve the potential range of activities, including publication, to share resources, and to encourage student mobility throughout the system.

4.2 (b) Contract Research and Consulting

The ASPG and its consultants are all in agreement that a high standard of professional education is dependent on having the active participation of top flight professionals in the teaching programmes of the school. It therefore follows that involvement in the field via either contract research or consulting activities is vitally important to the personal and professional development of the faculty. The feedback from such involvement is direct and complete providing a rich source of case studies and real expertise to the student. The interactions between faculty and full-time practising professionals are also fruitful in terms of expanding the understanding of each others field and the evolving nature of practice.

Such an approach to clinical role-based education in the university has long been established by the medical and legal professions but it is not as clearly recognized in the case of the architectural profession. Problems in the university centre around the recognition of contract-or-mission-oriented research as an acceptable alternative activity to academic research, and the recognition of consulting activities and product as equal to research papers and other credible academic activities as a basis for promotion and tenure decisions.

Guy Desbarats has attempted to provide a rationale for the recognition of these bridging activities in his paper on A University Knowledge System Model (see Appendix 2) in which he likens a school of architecture "to a scanning device seeking basic knowledge within the knowledge system, and seeking also problems requiring solution within the real-world field of interest. The main task of a school of architecture, in terms of curriculum design, being to relate, in pedagogical strategies, the problems selected to the means for their solution." Institutional clarification and recognition of such problem-solving units within the university would, in fact, solve the problem of legitimizing the kinds of activities engaged in, and go a long way to clarifying the position of the schools of architecture.

Another problem arising directly out of contract research and consulting is that of control of the extent of consulting activities which both provide

extra remuneration for the individual concerned and can create conflicts of interest. The issues raised here involve the need for adequate monitoring and control of consulting activities, clear definition of a "full-time" appointment and those activities which are considered to be a legitimate use of the university's paid time. The Study Group is adamant that consulting activity, like other forms of research, should not interfere with the teaching function which is the "raison d'être" of the faculty member's appointment in the university.

The ASPG therefore recommends that:

R-16 The schools should develop criteria for "acceptable" consulting on the principle that no consulting work or research should be undertaken unless it can be demonstrated that it is to the benefit of the students and/or the educational programme.

R-17 Consulting activities of full-time members of the faculty of the schools should be conducted through a "Contract Research Group" organized within the school to screen and monitor them and administer the contracts involved in a manner "open" to the administration of both the school and the university.

R-18 The universities and schools should give due consideration to the development and recognition of appropriate formula for the definition of a "full-time" appointment over an eleven-month year and set out a list of activities which a professional faculty member may normally engage in including consulting. Consideration should be given to adopting a variation of "geographic full-time" appointments used in the medical faculties.

R-19 Given full accountability and some control as set out in the above recommendations, the university should recognize contract work and consulting activities as legitimate and equal alternatives to other forms of academic research now used as criteria for the evaluation of faculty eligibility for promotion and tenure.

4.2 (c) Workloads/Teacher Training/Instructional Development

Throughout its discussions of the problems of architectural education and the problems of the individual schools the ASPG found itself discussing workloads, teacher training and instructional development as strong issues arising out of a central concern for the quality of the learning experience for the student. The ASPG believes that a student should manage his own learning process, and that the number of staff to student contact hours should be limited in order to provide enough time for him/her to do so. Directed workloads tend to be quite high in the existing programmes, and the Study Group is concerned that these should be modified.

All of the schools use the conventional lecture/seminar formats for some of their course work, and for the most part, the class sizes and workloads are similar to courses in the rest of the university. There is a tendency, however, for the student to downgrade the importance of lecture/seminar courses compared to that of the studio programme which makes far greater demands on their time. The compensating reaction on the part of the lecture course staff is to load up the course assignments with elaborate research projects causing conflicts of time allocation and deadlines.

Laboratories of the type used in the science faculties, are for the most part, not seen at the schools, although some special purpose workshops in structural modelling and aspects of building science, e.g. acoustics, are similar. One of the consultants, Desbarats, felt strongly that more use should be made of the laboratory format for the teaching of building science and technology aspects of the programme, and as a replacement for the conventional architectural studio.

The unique aspect of architectural education is in the studio course, although even here there are different models being used in the schools. The most common format (which could be related to Eberhard's "traditional" paradigm) is the studio programme based on the Beaux Arts "atelier" in which a "studio-master" has a section of students (between 15 and 20) and teaches on an individual basis by a process of drawing board crits

working with the student directly on the design of a building. In this process the integration of knowledge relevant to the design of buildings is handled by the studio-master drawing on his wide general knowledge of building. The quality of the learning experience is dependent on the ability of the instructor to bring together the wide range of information dealt with in other parts of the programme and his ability to communicate in this mode. This process is enormously time-consuming and makes for a variable workload throughout the term as the student approaches the resolution of the problem and needs more and more assistance. Although the role of the instructor is primarily that of a critic, his influence on the end product is pervasive.

Alternate forms of studio instruction are centred on the seminar format. Here the teaching process is generated by a dialogue between the instructor and a group of students dealing with the many facets of the problem. This process requires careful preparation on the part of both the student and the staff, and full participation. Additional experts can be brought in to supplement the resources aspect. The group format of the seminar can be more efficient in that it reduces the contact hours per week for the staff member, but increases the contact hours per week for the student. It also eliminates the necessarily repetitive aspects of the drawing-board crit.

Any discussion of workloads eventually gets to the subject of overall staff-student ratios. While this ratio is subject to a wide latitude in interpretation and is a crude indicator at best, it nevertheless is a useful one for comparative purposes provided it is calculated on the same basis for each school compared. The ASPG is concerned with the discrepancies it observes between the ratios at the schools in Ontario as shown in the following figures for 1974-75:

Toronto 1:12
Waterloo 1:18
Carleton 1:13 (becomes 1:14 for 1975-76)
Ryerson 1:18

This concern is increased when we compare data from U.S. schools supplied by the Association of Collegiate Schools of Architecture (ACSA). The best of the comparable U.S. and Canadian schools have ratios of the order of 1:10 or better, yet no one of the Ontario schools comes close to that figure. The ASPG is agreed that the Ontario schools should be brought to at least one agreed minimum ratio in order to achieve equity in the system. After careful consideration, the Study Group settled on the ratio of 1:13 as an appropriate as well as a defensible target figure for this purpose.

While the situation at the individual schools varies, it is generally true that there are serious overloads produced by the present method of handling the studio programmes particularly where instructors are required to carry another course over and above their studio assignment. As a result they do not have time to develop their own abilities via research or consulting during the academic year, and there is inadequate preparation time for the studio assignments themselves.

Most of the faculty in the architecture programme are drafted directly from practice and, while their professional skills and capabilities are highly developed, they have no training or experience in education. This problem is of course not unique to the architectural education field but the schools have not yet taken any advantage of the COU's attempts to provide incentives for instructional development, nor have they tapped the resources of the Ontario Institute for Studies in Education. As a result the formats chosen for teaching programmes tend to be those remembered from other architectural schools and there is not enough innovative teaching.

If the field of architecture is to develop it will be dependent on the opening up of connections to new areas of knowledge, to respond to new opportunities and career-roles which are emerging constantly in the field. Recent examples are those related to environmental psychology and computer science. Ways and means must be found to reduce workloads to allow more time for preparation and staff development, but also to encourage members of staff to take leave to upgrade their qualifications in new fields, or to spend time in a consulting practice to pick up new experience directly.

The ASPG therefore recommends that:

R-20 Schools should make a concerted effort to explore new and alternative instructional formats and new instructional techniques to improve the quality of teaching in all areas of the programme and to improve the efficiency of resource utilization with a view to cost reduction. This recommendation applies particularly to studio courses in the undergraduate programmes where alternatives to "board-crits" as the basis of instruction are clearly needed.

R-21 The schools should endeavour to obtain and share the services of an educational consultant or consultants for one year to provide expert assistance in instructional development.

R-22 The universities and the schools should agree on guidelines for full-time workloads and a target of 1:13 for staff-student ratio in this discipline.

R-23 To facilitate the student to manage his/her own learning experience, the schools should agree that the curricula should be organized to keep the student workload at a reasonable level.

R-24 To avoid stagnation due to isolation from practice or aging or tenure, a system of rotating one or two-year leaves for faculty members should be instituted so that they may periodically play a major role in a significant professional project, or obtain further education to upgrade or change their qualifications. In making this recommendation, the ASPG is aware that this principle should probably apply equally to all faculty members in the universities, and it therefore urges COU and MCU to consider ways and means to develop the funding required. At the same time, the ASPG would argue for priority consideration in support of fields, including architecture, that are in a stage of rapid transformation.

4.2 (d) Continuing Education and Mid-Career Training

In his report Eberhard makes an eloquent plea for the continuing education of architects and others. In part, he says

> Universities in general, and architectural schools in particular, should be thinking more seriously about "adult" education. Much lip service is paid to the notion of an educated person being involved all of one's life in various educational experiences, but not much has been done about it. In an educated and civilized society like Ontario, the interest and opportunity should be enormous. If the universities were not primarily oriented to 18-24 year old persons, their costs to society would be viewed differently.
>
> Adult education for architects in universities should be much broader than so-called "continuing education" programmes imply. While subjects like ecology, building economics, energy conservation, and technological change are all of direct benefit to practicing architects; and while all of these subjects could be organized within a university setting, it should also be possible to participate in seminars of a serious nature from the humanities, social sciences, law, etc., as a part of one's ongoing education. A broad programme of study such as this would not be unique to architects, but to the adult population of Ontario generally.

The ASPG cannot but endorse Eberhard's concepts on this subject. The schools of architecture in Ontario should seriously consider continuing education both for architects and non-architects. Continuing education can be achieved by special intensive short courses, or by "opening up" some of the regular courses so that others may take them. This would probably necessitate scheduling some of the courses in the evening. Many of the seminars and tutorials planned for the MArch (Professional) recommended in section 4.1 might be adaptable for this purpose.

In section 4.1 (d) the ASPG suggests a number of alternative routes leading to registration and the practice of architecture. In addition, the proposed M.Arch (Professional) could provide

new and exciting opportunities for the hidden constituency of the profession - the "almost" architect - to take the final step of acquiring the required level of professional education for entry into practice as a registered architect. It could also provide new opportunities for persons in allied fields who wish to become bona fide members of the profession of architecture.

The ASPG therefore recommends that:

R-25 The schools should consider ways and means to make selected undergraduate and graduate courses accessible to a wider public, and to provide intensive short courses in architecture to meet specific demands.

4.3 Development Planning

The ASPG as a result of this study, recognizes that the feasibility of the different development plans of each of the participating schools is dependent ultimately, on a continuously fluctuating set of circumstances particular to each of the parent universities, so that it is very difficult to predict very far in advance the particular interaction of opportunity and constraints which makes one alternative more possible than another.

The ASPG therefore recommends that:

R-26 Development planning should be seen to be an on-going process and that each school should commit appropriate resources to continue its participation in that process;

R-27 Development plans and planning be coordinated and their implementation monitored by the OASDA. (see Section 4.5(c))

R-28 Development plans and planning projects be categorized as follows:

(a) Immediately feasible: to include those projects, (e.g. reorganization and consolidation projects) which can be implemented within the next 2-5 years by a participating school given the approvals, authority and resources of the parent university alone and therefore require only intra-mural negotiations.

(b) Intermediate-range: to include those projects which can only be implemented within 3-10 years from now after extra-mural negotiations and approvals, (e.g. MCU for new degree programmes, COU for ACAP approvals) which require additional funding (operating and capital) and coordination with other schools, which therefore require leadtime and considerable documentation, but which require planning action now.

(c) Long-range: to include those projects which may become feasible after 5 years from now but which should be explored now and cyclically to the point of determining the degree of probability of their ultimate feasibility.

R-29 The OASDA maintain a watching brief on category 1 projects above, but concern itself mainly with category 2 and 3 projects.

4.4 FACILITIES

4.4 (a) Physical Plant

The ASPG received and studied the initial version of the Lappin Report and met with Mr. Lappin to debate his conclusions. The Study Group had the benefit of the statistical information provided by Carleton University which has the only new building built directly for a school of architecture, and therefore it could assess the impact of Mr. Lappin's recommendations against an actual familiar built facility. As a result the Study Group found itself concerned that some aspects of the proposals were too restrictive if they were to be applied too rigidly, i.e. if the MCU and the universities were to hold to both the macro formula multiplier to get the total net assignable footage and then also hold to the distribution figure that assigned that space between the school and the University.

The net effect of the figures in his final report (Appendix 5) is to require that the policy of the schools to provide each student with a work station will have to be modified by adroit timetabling, or abandoned. To adjust to multiple use of the same work station, capital funds will be required for some renovation and additional equipment.

Both Waterloo and Ryerson require entirely new facilities to meet their expanded programmes as projected, or because of locational and leasing problems related to their particular circumstances.

The ASPG therefore recommends that:

R-30 Because most space formulae are best applied in macro fashion at the institution level, the figures used in the Lappin Report (see Appendix 5) can at best be considered as "averages", but should provide reasonable guidelines for future planning. It is recognized here that each institution has the choice to vary the use of space within the overall allocation in order to realize its own priorities.

R-31 The University of Toronto relocate at least one of the Departments in the recently disbanded Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. With funds made available for renovations, the present facility can continue to serve the needs of the reorganized Faculty of Architecture and could quite possibly be shared with the remaining Department.

R-32 Waterloo be given approval to proceed immediately with the planning of a new facility to house the new separated or integrated Faculty or Department as recommended by the ASPG. The new facilities should be ready for occupancy in fall, 1978. In the meantime some provision of temporary space will be necessary to accommodate the increasing number of students.

R-33 Carleton be allocated capital funds for renovations in order to maximize the use of the present building, and for expansion of the building, all to accommodate the expanded programme that has been recommended.

R-34 Ryerson be given approval to proceed with the planning of a new facility of a size as suggested in the Lappin Report. The facility should be ready for occupancy not later than fall, 1979.

4.4 (b) Library Requirements

As requested, all three consultants commented upon the library facilities in the four universities they visited. The ASPG is not in a position to make definitive recommendations concerning library requirements at this time. It is obvious, however, that if there is to be an increase in the graduate component of architectural education in the Ontario universities, the suitability of existing library holdings must be carefully reviewed.

The ASPG therefore recommends that:

R-35 During the 1975-76 academic year OASDA sponsor a study of the library facilities in the four universities with programmes in architecture.

4.5 Organization

To implement the recommendations contained in previous sections of the Report a number of organizational discussions will be required affecting the universities, the component schools, and the OAA. The ASPG has gone into these problems in some detail and has set out its proposals in this section for the limited continuation of the ASPG, the creation of an Architecture Board of Ontario, the modification of OASDA, and the modification of some functions of the OAA.

4.5 (a) Architecture Study Planning Group

The ASPG has come to the conclusion that it is necessary to continue the work of the Study Group for an interim period of time, either by extending the life of the ASPG or by putting into place another group. The ASPG believes that it would make more sense to continue the existing Study Group for this interim period of time, but note needs to be made that the present chairman of the ASPG will be on sabbatical leave and will therefore not be available to continue that office.

The primary purpose for extending the life of the ASPG is to elaborate the nature and functions of the AEBO and to help negotiate its establishment by the universities and the OAA. When the AEBO is established there will be no further need for the ASPG. During this interim period the ASPG should be available to assist the universities in responding to the "immediately feasible" proposals contained in this Report. The ASPG could also be of assistance to the universities in considering the implications of the "intermediate" range proposals discussed in section 5. The Study Group should also make itself readily available to the OAA if that body should seek assistance in the development and evolution of its various roles and responsibilies relating to architectural education and registration.

The ASPG therefore recommends that:

R-36 The ASPG be continued for a limited interim period to elaborate the nature and functions of the AEBO and to help negotiate its establishment by the universities and the OAA.

4.5 (b) The Architecture Education Board of Ontario

It is essential that the AEBO be established by formal agreement of the OAA and the participating universities and that the terms of this agreement be explicit and complete. The ASPG believes that modification of provincial legislation will not be required but that explicit delegation of authority from the OAA and the universities to the AEBO will most certainly be required. This will require modification of the Regulations of the Registration Board of the OAA and will require formal action by the Senates and Boards of Governors (or other appropriate governing bodies) of the universities.

There are three essential constituencies that should be represented on the AEBO: the educators (the universities), the practitioners (the OAA), and the public-at-large. The Study Group recommends that each of the universities participating in the programme should name one member of the AEBO. That would mean four initial representatives from the universities. It is recommended that the OAA name two members of the AEBO who should not necessarily be present office holders in the OAA nor necessarily represent the formal elements of the OAA. It is considered that two members from the OAA would provide for needed balance and active participation in the face of the inevitable pressure of other responsibilities for a practicing architect. It is recommended that the public-at-large be represented on AEBO by two non-architect members, one named by the Ontario Council on University Affairs and the other named by the Lieutenant-Governor-in-Council. It is recommended that the term of office of each member of AEBO be not less than two years, in order to provide for continuity. The precise terms of office should be determined by the agreement between the universities and the OAA and provisions should be made for the staggering of terms.

The AEBO should have a chairman elected by the AEBO from among its members and the term of office should be one year not immediately renewable.

The AEBO should be served by a salaried executive officer hired by the Board. It is essential that this person be acceptable to both the academic and practicing communities and therefore should have both academic and professional qualifications. These qualifications need not necessarily be exclusively architectural but certainly a substantial element should be in architecture. In addition to the executive officer there should be a small secretariat for the normal running of a small office. Beyond the office of the AEBO it will be necessary to marshall a very large pool of human resources from both the practicing world of the OAA and the academic world of the universities in order to carry out the functions of the AEBO, in terms of both the carrying out of the preceptorship and the monitoring of the professional MArch degree programmes.

In summary the ASPG recommends that:

R-37 The OAA modify the regulations of the Registration Board and take such other actions as are appropriate, and the participating Universities take such formal action in their Senates and Boards of Governors (or by other bodies) as required to explicitly delegate authority to the AEBO to accomplish its purposes.

R-38 The AEBO be composed as follows:

(a) one member named by each of the participating universities, (i.e. 4, initially)

(b) two members named by the OAA,

(c) two non-architect members, one named by OCUA, one named by Lieutenant-Governor-in-Council.

R-39 The term of office of the AEBO members be not less than two years, terms staggered.

R-40 The Chairman of the AEBO be elected from among its members for a one-year term, which would not be immediately renewable.

R-41 The AEBO appoint an Executive Officer acceptable to both the academic and the professional communities, with a Secretariat.

4.5 (c) The Ontario Association of Schools and Departments of Architecture

OASDA should immediately take into consideration a review and revision of its constitution. It is important that steps be taken at an early stage to include representation from Ryerson Polytechnical Institute in the affairs of OASDA.

As the provincial architecture "discipline group", OASDA has a critical role to play in the elaboration and putting into place of the various proposals arising from this Report. The most significant matters are:

(a) consideration of the various possibilities for the development of graduate programmes in architecture based upon scholarship and research, which would parallel the Professional Master of Architecture programme;

(b) initiation of the study of library facilities to which the ASPG has not been able to give the degree of consideration that it would have liked (see section 4.4 (b)); and

(c) liaison with the Association of Canadian Faculties of Environmental Studies (ACFES), the Canadian Conference of University Schools of Architecture (CCUSA), and the Association of Universities and Colleges of Canada (AUCC).

The ASPG therefore recommends that:

R-42 OASDA be recognized by COU and MCU as the "discipline group" for architecture in Ontario.

R-43 OASDA review and revise its constitution and membership in line with its new responsibilities as set out in this study.

4.5 (d) The Ontario Association of Architects

The OAA should consider immediately the appropriate mechanism for working with the universities in the establishment of the AEBO. In a slightly longer time-frame, the OAA needs to consider the design of the new professional work experience requirement and programme, and the design and management of the oral Professional Ethics Examination. The OAA must also give careful consideration to the phasing out of the present Registration Course, ensuring that the appropriate new mechanisms are adequately in place before the present requirements of the OAA are completely disestablished.

The ASPG therefore recommends that:

R-44 The OAA consider immediately the appropriate mechanism for working with the universities in the establishment of the AEBO, and the phasing in of the new procedures and requirements for registration as set out in this Report.

4.6 Funding

On the basis of data supplied, the Study Group is satisfied that while some of the programmes under review are under-funded, this is an internal matter between the school and its parent university. On the whole, the ASPG is agreed that the current operating grant by formula with a weight of 2 BIUs per student for these programmes is just adequate to meet their costs to maintain a reasonable but not exceptional quality of education. While the modifications to these programme structures and the improvements in efficiency proposed in the Report will provide a better and more diversified system across the Province, it will require funding at at least the same level to achieve the benefits expected.

A cursory feasibility study of the proposed professional Master of Architecture programme indicates that normal Provincial formula financing should, in general, provide enough support to operate the programmes, on the basis of a formula weight of four, in accord with other professional master's degree programmes.* However, the projected enrolment for the University of Waterloo programme would appear to generate lower "overhead" funding than is considered desirable by the ASPG. Consideration might have to be given to alternative funding arrangements for the Waterloo programme or to offering part of the programme jointly with other universities.

It must be noted that the calculations include the general costs of the operation of the AEBO but do not include the costs of developing and administering the AEBO Qualifying Examination. The ASPG would urge the OAA and the universi-

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* The following illustrative assumptions regarding the M.Arch. preceptorship are, in part, the basis of the feasibility calculations:

(a) the programme would run for 3 terms of 15 weeks, divided into a lecture component of 10 weeks (or equivalent time), and an office-based component of 5 weeks (or equivalent time) (these components could be run concurrently, integrated, or block scheduled as appropriate).

(b) a lecture course module would consist of 2 - 1 1/2 hour lectures/week/term; a full load during the lecture component would consist of 4 lecture modules, i.e. 2 lectures/day for 4 days/week.

Lectures would be given once to all the students enrolled at a particular university.

(c) the office-based component would consist of sections of 7 (maximum) students each under the direction of a tutor employed from an office practice.

A typical module would run for 4 days/week for 5 weeks, during which the tutorial section would be taught in seminar in the office or in the field at a construction site.

ties to give early consideration to appropriate ways of generating the funds necessary for this purpose. Arrangements for this funding should constitute part of the formal agreement between the OAA and the universities in establishing the AEBO.

The Study Group would also note that if the professional Master of Architecture programmes are introduced on a phased basis, university by university (as appears probable), special start-up funding will be needed for the AEBO until all programmes are in place.

The ASPG therefore recommends that:

R-45 The recommended professional master's degree programmes be funded at an operating formula grant weight of 4 and the revised undergraduate programmes continue to be funded at an operating grant formula weight of 2.

R-46 To accommodate phasing in of these professional master's degree programmes, start-up funding be provided to cover overhead costs of the AEBO.

R-47 Separate funding be provided for the development and administration of the Qualifying Examination, part of which would be provided by candidates' fees, and these funding arrangements should be decided at the time of establishing the AEBO.

(d) of the total of 12 lecture course modules in the programme, 6 modules would be mandatory as prescribed by the AEBO covering technical, administrative, managerial, legal, etc. topics related to the practice of architecture. The remaining 6 modules could be elective from a range of offerings at the university designed to open up areas of specialization or to provide the opportunity to explore one aspect of practice in more depth.

(e) the three office-based tutorial modules would be mandatory, prescribed by the AEBO, covering specific detailed operational topics such as specifications, site layout and inspection, project management, etc.

5. DEVELOPMENT PLAN FOR ARCHITECTURAL EDUCATION IN ONTARIO

In the previous section of this Report, a framework for architectural education in Ontario has been set out which is based upon a number of general recommendations affecting all the participating schools. In this section the ASPG sets out specific objectives and requirements for each of them in some detail within particular time frames. In so doing, it has created a development plan for architectural education in Ontario.

A Summary Section is provided which shows the enrolment projections for all the present and projected undergraduate and graduate degree programmes, and comparative data.

5.1 University Programmes

The following sub-sections outline the salient points discussed regarding the key problems facing each of the four schools in Ontario, and set out specific recommendations for immediate, intermediate-range and long-range actions. The recommendations cover programme content and format, physical plant, organizational, and administrative matters.

5.1 (a) Department of Architecture, University of Toronto

The ASPG feels that it has a reasonably complete understanding of events leading up to the disbanding of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture and it agrees with the University's decision to do so under the circumstances, although it disagrees with the decision on the basis of principle. The Study Group is of the opinion that a University the size of Toronto can and should support a wide-angled programme in the environmental design field which the Faculty was obviously set up to provide. The failure of the Faculty to obtain that wide support and to develop an integrated programme does not invalidate the objective, but it may indicate that other modes of programme organization, including more emphasis on graduate level activity in environmental design areas, would be more appropriate and acceptable in the University. The Study Group is expressly concerned now that conflicts between different factions within the remaining Department of Architecture are resolved in the process of reorganization.

In the first instance, the ASPG and its consultants are convinced that the main philosophical thrust and pedagogical approach of the current programme in architecture is an extremely valid one which should be continued. It does, however, feel that it lends itself to conversion to a new form of general education in architecture which could easily be integrated with an undergraduate programme in arts and science. It therefore endorses the proposal by the Department to organize such a programme in collaboration with the Faculty of Arts and Science which would provide the equivalent of one year of architectural studies within the degree programme in that Faculty. It follows, therefore, that the protagonists of this proposal should be given a clear mandate to develop such a programme of architectural studies with the objective of opening up a much wider general interest in architecture.

Given an architectural studies programme as described, a new two-year concentrated professional programme in architecture, under separate leadership, should be developed leading to a Bachelor of Architecture degree which would provide a professional stream outlet for selected students from the architectural studies programme. This new two-year programme would in turn lead to a special one-year Master of Architecture (Professional) degree organized under the "Preceptorship Programme" described elsewhere in this Report. The professional nature of these combined programmes could and should provide opportunities for reallocation and better utilization of the current faculty resources. Certainly the enlarged total enrolment of the combined programmes would provide the opportunity to acquire new staff positions which could provide additional specialist resource skills which are badly needed within the Department.

The present graduate programme is inadequate and needs to be rebuilt to provide linkages to the wide range of graduate disciplines available in the University. It is here that the long range development of the connections to people and research activities in specialist fields in the University can open up a whole new direction for this school. Such a graduate programme, to be effective, will also require separate leadership and a clear sense of mission.

Given acceptance of the notion of four separate programmes, each with its own leadership as outlined above, the Department should be reorganized as a Faculty of Architecture with its own Dean. He/she would require clear authority over all the programmes, and these would be coordinated by a single Faculty Council.

The existing building in which the Department is housed appears to be adequate to handle the programmes and enrolments envisaged in these proposals, provided that at least one, if not both, of the former Departments are relocated elsewhere. The revised teaching programmes will require that the space be renovated and reallocated, and new equipment be provided. Capital funds will be required.

The ASPG is aware that a fairly long transition period will be required to phase out and replace existing programmes. It is concerned, however, that strong action is needed and it urges the University to create the new Faculty of Architecture immediately and to proceed with the recruitment of a Dean whose appointment would commence July 1, 1976, and whose mandate would be to implement these recommendations.

The Study Group is also concerned that detailed planning start immediately towards the reorganization proposed, and that positive action to taken to resolve the space and accommodation problems of the now separate departments. It therefore urges the University to appoint an acting Dean with full power to act on these matters for the interim period.

The ASPG recommends that:

R-48 The following immediately feasible actions be initiated:

(a) with the dissolution of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture, the Department of Architecture should become the Faculty of Architecture with its own Dean;

(b) within the Faculty of Architecture, four new programmes, each with its own programme chairman be established:

(i) a Programme in Architectural Studies - a programme making lecture, workshop and studio courses in architecture available to students registered in BA or BSc degree programmes within the Faculty of Arts and Science. A maximum enrolment of 150 places is suggested for the studio course.

(ii) a Programme in Architecture - a programme of two years of intensive studies in architecture leading to a Bachelor of Architecture degree.

Admission to this programme would require a BA or BSc degree and prerequisite courses, equivalent to a one-year academic load in the Programme of Architectural Studies. Students with a BA or BSc degree, but not having this prerequisite would, within the BArch degree programme, complete an additional year of study.

The combined admission to the Bachelor of Architecture degree programmes should be held at the present level of 70 students.

(iii) a Programme in Graduate Studies in Architecture (Professional) - leading to a Master of Architecture (Professional) degree. (See recommendation R-49 following).

(iv) a Programme in Graduate Studies in Architecture - leading to a Master of Architecture (Academic) degree. (See recommendation R-48 (d) following);

(c) the Bachelor of Architecture degree programme as it is now constituted be phased out ;

(d) the Faculty of Architecture reorganize the present graduate programme of studies in architecture leading to a Master of Architecture degree and maintain an enrolment of 20 students. Provision should be made for this programme to draw from each of the four divisions of graduate studies (social, physical, life sciences and humanities) to strengthen graduate programmes of study in areas which cross disciplines, but focus on the man-made environment.

R-49 The following intermediate-range actions should be initiated:

(a) the Faculty of Architecture establish a twelve-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see section 4.1) and designed to accommodate an anticipated enrolment of 75 students;

(b) following on a decision regarding the allocation of space to the new Faculty within the existing building, the Faculty should proceed immediately to plan and implement a renovation project to provide for the revised teaching programmes.

R-50 The following long-range actions should be considered:

(a) the development of several specialized courses within the Master of Architecture programme, linking, through the School of Graduate Studies, allied interests and disciplines. The Master of Architecture programme should maintain an enrolment of not more than 40 students;

(b) the expansion of the range of offerings in the programme in architectural studies, so that courses in architecture are available to all undergraduate students who desire such courses.

5.1 (b) School of Architecture, University of Waterloo

The ASPG acknowledges the many difficulties which have beset the School since its inception in 1967 in the Department of Systems Design in the Faculty of Engineering, and those conditions which seriously inhibit the operation and further development of its programmes now that the School of Architecture is a component of the Faculty of Environmental Studies. During its short and troubled history, the School has experienced considerable difficulty in defining its objectives and the means to achieve them. Frequent changes in leadership, of physical accommodation and place within the administrative structure of the University have attended the School's search for identity and direction. Only recently has the School of Architecture attained a modicum of stability and begun to discern a sense of direction and purpose appropriate to its geographical location and place within the University of Waterloo.

The ASPG wishes to express its deep concern for the difficult situation in which the School of Architecture is placed at the University of Waterloo. It strongly believes that the School is needed within the system of architectural education in Ontario and that considerable expansion in enrolment should be considered up to, say, 350 students. It therefore urges the University of Waterloo to resolve, without delay, the budgetary and organizational problems which now obtain in the School of Architecture in the Faculty of Environmental Studies. Urgent action is also required to protect the interests of the faculty and students who are seriously committed to the programme of this School.

There appear to be two alternatives: integration or separation.

If integration were elected, the School would be brought into a working relationship with the Faculty of Environmental Studies. The most obvious development would be the establishment of a two-year, core curriculum which would be common to all units of the Faculty and provide access to various programmes which would include that of a two-year programme of study leading to a bachelor's degree in architecture. This would tend to make full use of the resources of the Faculty and require the cooperation of all of its units and an understanding of the special needs and procedures of architectural education. If this course were adopted, the enrolment would probably be quite large and a sound basis would be established for decisions concerning entry into the various programmes within the Schools and Departments of the

Faculty of Environmental Studies. Such an arrangement would also prepare students for further studies in other Faculties of the University of Waterloo, the Faculty of Environmental Studies at York University and the School of Landscape Architecture at Guelph University.

The alternative - separation - implies that the School of Architecture would become an autonomous unit within the University. That is, it would probably be a Faculty of Architecture which could have linkages with many components of the University including, particularly, the Faculty of Environmental Studies and the Department of Systems Design in the Faculty of Engineering. The School would be committed to a multi-disciplinary design direction. However, although autonomy has its attractions, it has a concomitant danger of isolationism. Therefore, if separation from the Faculty is elected, the School or Faculty of Architecture, to facilitate interaction with the academic community, should be provided with appropriate accommodation and be located on the campus of the University of Waterloo.

The ASPG, at this time, is not able to make a recommendation concerning these alternatives. In fact, the best course may well be somewhere between the two extremes described above. However, immediate action is required to establish the School's place within the University and in the interests of architectural education in Ontario, to come forward with a development plan. This decision will determine the terms of reference for the development of the School's programme and for the appointment of its new Director or Dean.

The nature of the "cooperative" component of the School's programme would also be determined by the School's place within the University. A fully integrated programme within the Faculty of Environmental Studies would require revision of the present co-operative programme so that it would serve all Departments and Schools of the Faculty. If the School were to be an autonomous unit, it would probably develop an even more integrated work/study programme similar to that proposed by Eberhard who recommended that a year-long, coordinated, and carefully monitored work/study period occur between the third and fourth years of the School's programme.

The Study Group is aware that much time would be required to accomplish the reorganization inherent in the proposed alternatives for development of the School's programme of architectural studies at the University of Waterloo. Nevertheless, it believes that drastic action is required to resolve the problems which persist at the School of Archtitecture and seriously inhibit its development within the system of architectural education in Ontario.

The Study Group believes that graduate studies in architecture could be established at the University of Waterloo if the school were to develop programmes based upon linkages with the Faculties of Environmental Studies, Engineering and Mathematics which could provied special instruction in ecology, systems and computer-aided design.

The Study Group understands that immediate action is required to provide facilities to accommodate in September, 1975, the largest number of students ever registered in one term in the School of Architecture. In addition, the University must begin planning to provide new space for the revised programme on the basis of the space recommendations outlined in this Report. The present building is clearly inadequate for even the present programme of the school.

The ASPG therefore recommends that:

R-51 The following immediately feasible actions be initiated:

(a) the School, Faculty and University begin discussion to determine the basis of continuity of the School, (i.e. integrated, separated, other), and then decide upon the appropriate administrative linkages, budget levels, staffing ratios, administrative support, physical space and plant allocation based on an enrolment target of 350 students;

(b) on the basis of the decision in R-51 (a) above, the University should appoint a Director or Dean whose term of office would commence July 1, 1976;

(c) the present Director should be given a clear mandate to start the required reorganization, and with the faculty, he should then consolidate and reorganize the curriculum to meet the requirements of the approved organizational option based on a clearly stated mission or focus, developing appropriate linkages to other faculties and programmes, all phased to coincide with the establishment of the proposed graduate "preceptorship" programme referred to in R-52 (a) following;

(d) the school reorganize its work/study programme to meet the revised programme requirements;

(e) the University, in consultation with the school, find additional temporary space immediately for use in the 1975/76 session;

(f) given improved staffing and following reorganization, the school develop a research programme to develop knowledge, expertise and contacts in areas related to development plan priorities.

R-52 The following intermediate-range actions and projects should be initiated:

(a) establish a 12-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see section 4.1) and designed to accommodate an anticipated enrolment of 30 students;

(b) the school should begin immediately to plan a building project to provide more student places and to facilitate the change in teaching programme, and the University should take the necessary steps to implement it as soon as possible.

R-53 The following long-range actions and projects should be considered:

(a) graduate degree programmes, Master of Architecture (Environmental Design), Master of Architecture (Academic).

5.1 (c) School of Architecture, Carleton University

The ASPG strongly endorses and supports the intent and attempts of this School to provide students with the opportunity to choose from a wide range of alternative course patterns leading to the BArch degree with the objectives of preparing them for eventual specialization in specific career roles within the broad field of architecture suited to their individual aptitudes. The Study Group is concerned, however, that the present programme at Carleton lacks focus, and that the School has attempted to cover too wide a range of alternatives with the available resources. It is agreed that diverse specializations should be the basis of graduate programmes, and that a more limited range of alternatives is appropriate in an undergraduate programme in architecture.

In line with the ASPG's recommendations regarding the development of a preceptorship year as a replacement for the fifth year, the School may wish to consider integrating a consolidated and revised four-year degree programme in architecture within a broader ranged degree programme in environmental design under that label, which would then have other clearly defined major non-architecture options (eg. urban design and planning), and which would provide the wider range of coursework and other resources needed to enrich the programme in architecture.

The ASPG noted with interest the beginning of academic research efforts and the considerable number of contract research projects being undertaken by staff at this School, and the potential of these activities because of the proximity of federal government agencies. The Study Group also discussed material on project offices supplied by Shadbolt (Carleton Development Plan) and Desbarats and agreed that Carleton appeared to have the potential to undertake such an experiment but it will probably require outside funding.

The ASPG strongly endorses the research activities started at this School and urges the School to continue to develop and expand these activities with a view to the development

of graduate studies in about five years from now. The most promising areas of concentration would appear to be in pre-design programming and planning, policy development, administration, property development, urban design, and applied building science, all of which are areas of high marketability in the federal government.

While this School has a new building expressly designed for it, the ASPG recognizes that the current enrolment has already exceeded the designed capacity of the building, a situation compounded by the provision of space for the School of Industrial Design. The current space-utilization needs to be reconsidered, and some alterations and renovations to the building will be required to provide for the revised teaching programme, and by this means more student places could be made available.

The ASPG is convinced that Carleton has a high enrolment potential in the 400 student range by virtue of its diverse programme as well as by the consistent demand demonstrated by applications received. It therefore urges the School to make every effort to increase its enrolment within the renovated existing facilities. Also, it recommends that further capital funds be provided for expansion of those facilities to meet the larger enrolment objective.

The ASPG recommends that:

R-54 The School of Architecture initiate the following immediately feasible actions or projects:

(a) Consolidate and reorganize the present five-year BArch programme to four years, phasing the implementation of the changes to coincide as nearly as possible with the establishment of the new fifth-year graduate programme referred to in R-55 (a) following, strengthening the mandatory core programme and replacing the present wide-ranging and freely elected "minor" with a few well defined areas of concentration chosen on the basis of maximum potential, real support from and interactions with other sectors of the University, reallocating resources accordingly. Consideration should be given to naming the degree Bachelor of Environmental Design (Architecture);

(b) consider ways and means to improve space utilization and increase the number of available student places to approximately 350, including modification of the policy regarding allocation of student work stations in studio areas;

(c) form a Contract Research Group, regularize research and consulting activities as recommended in section 4.2 (b), expand these activities in selected areas to develop knowledge, expertise and contacts in areas related to development plan priorities;

(d) decide upon the most promising source of outside funding support; and develop an appropriate "project-office", check out feasibility, and if feasible, implement it.

R-55 The following intermediate-range actions and projects be initiated:

(a) the School of Architecture establish a twelve-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see section 4.1) and designed to accommodate an anticipated enrolment of 45 students;

(b) Carleton University should consider the possibility of reorganizing a number of professional schools, including Architecture, and perhaps the Faculty of Engineering, into a larger division of professional programmes for the purpose of increasing its offerings in and expanding its research and graduate study opportunities in the broad field of environmental design. Alternatively, it should consider the establishment of a Faculty of Environmental Design in the near future in order to focus campus interests in this field;

(c) the School of Architecture should, in collaboration with the School of Industrial Design, the Faculty of Engineering (particularly the Department of Civil Engineering), and other interested sectors of the University explore ways and means to expand enrolments, course offerings (graduate and undergraduate), resources, research and other activities in the field of environmental design;

(d) explore, and where possible, implement continuing education and/or graduate diploma programmes in architecture and environmental design, designed to set the groundwork for graduate degree programmes to follow;

(e) the School of Architecture should begin immediately to plan and implement a renovation project to modify its physical plant to provide more student places and facilitate the changed teaching programme, and simultaneously, to begin the planning process for expansion of the School of Architecture building, all of which would accommodate a total of 465 students.

R-56 The following long-range actions and projects be considered:

(a) graduate degree programmes, Master of Architecture, Master of Environmental Design, suggested target enrolment total of 20 students;

(b) reorganization of the schools into a Faculty of Environmental Design.

5.1 (d) Department of Architectural Science, Ryerson Polytechnical Institute

The ASPG acknowledges that, while this programme has been developed outside the university system, it has now reached the stage where it must soon be recognized as the fourth school in the Province of Ontario preparing graduates for registration in the OAA. The ASPG is of the opinion that the province can easily absorb the number of new graduates represented by this programme as they become eligible for registration in Ontario.

The Study Group strongly endorses the intent and direction of the programme with its focus on professional practice and building science. It is concerned, however, that the programme as presently constituted does not yet adequately deal with the development of the social responsibility of the student, and this matter needs further attention both in terms of course additions and revisions, and choice of studio problems. Additional staffing and budget will be required to achieve this objective.

Subsequent to these programme modifications and the availability of a preceptorship programme in the Province in line with the ASPG proposals in section 4.1, formal "recognition" by the AEBO, as for the university schools in Ontario, should follow in due course. In the interim, Ryerson and the OAA should enter into discussion concerning the future of the present graduates with respect to current registration requirements.

The Department appears to be ambiguous as to its future direction and appropriate size and it has no clear development plan at this time. This is to be expected given the uncertainty of the present position with respect to recognition by the profession. They have, however, put forward tentative suggestions for graduate programmes but these are inadequately developed and raise questions about Ryerson's position with respect to COU and its established procedures for the development of graduate work. The consultants and the ASPG are in agreement that, except for the post-graduate preceptorship year referred to above, graduate work at Ryerson is a long-range consideration. The ASPG considers that there should be no reason why Ryerson graduates would not be accepted into graduate programmes at other schools in architecture and environmental studies on an individual basis as equals with graduates from other schools and disciplines even though it is clearly recognized here that admission to graduate programmes is the prerogative of each separate university.

The real potential for development related to this Department at Ryerson lies in expanding the range and scope of options within professional practice and building science, given the excellent resources of the Toronto metropolitan area and the concentration of architectural practices and construction activity there. Such a programme would feed a very wide market within and beyond conventional architectural practice, so that a large enrolment in the 800 range should be seriously considered.

Planning should proceed immediately for new accommodation for this Department to be ready for occupancy in September, 1979, when the lease on present facilities expires.

The ASPG therefore recommends that:

R-57 Ryerson take whatever steps are necessary with the MCU, COU and OCUA to ensure that the funding of its degree programmes is brought to parity with the universities, and that its procedures for programme development, data collection, etc. are all consistent and comparable with those of the universities.

R-58 The following immediately feasible actions or projects be initiated:

(a) Ryerson should provide some additional funding to improve the staff/student ratio and operational budget for the programme in architectural science to bring it in line with R-22;

(b) the number of new students admitted to the programme in architectural science should be held at the present level (120), while the staff build-up occurs to accelerate the achievement of improved ratios before further development is commenced;

(c) the Department of Architectural Science should, with the assistance of its Advisory Council and other experts, continue to strengthen its four-year undergraduate curriculum based on a solid core programme in architecture, building science and project management, while enriching the socio-behavioral science and humanities inputs. Consideration should be given to designating the degree as a Bachelor of Science in Architecture;

(d) the Department of Architectural Science should work out a detailed development plan, based on a clearly stated theme within the field of professional practice and building science, which would further widen the scope and options available in the present programme. Because of the wide range of employment opportunities such a programme could serve, consideration should be given to a very great increase in enrolment, in the long range say to 800 +. Consideration should be given to the appropriate reorganization of the Department, including the possibility of its becoming an autonomous Faculty within the Institute;

(e) Ryerson and the OAA should enter into discussion concerning the future of the graduates of that programme with respect to registration requirements, who graduate during the interim period until the AEBO is established and operational.

R-59 The following intermediate-range actions or projects should be initiated:

(a) the Department of Architectural Science establish a twelve-month graduate programme leading to a Master of Architecture (Professional) degree organized in collaboration with the AEBO (see section 4.1) and designed to accommodate an anticipated enrolment of 60 students;

(b) planning by the appropriate departments in Ryerson should begin for the eventual purchase or construction of suitable physical plant to accommodate the expanded programme;

(c) the Department of Architectural Science should develop a research and consulting programme aimed at defining the career-role objectives of the development plan, obtaining first-hand field experience, defining the knowledge base relevant to teaching programmes in these areas, locating and co-opting expertise, upgrading staff qualifications, etc.

R-60 The following long-range actions or projects be considered:

(a) continuing education, graduate diploma and graduate degree programmes.

5.1 (e) York University

The proposals outlined in this Report for the development of the four existing degree programmes in architecture will still leave a sizable number of qualified applicants without admission to an undergraduate programme. The ASPG is of the view that accessibility to an education in the subject of architecture should be available to a larger proportion of those applicants and therefore that serious consideration should be given to the introduction of another undergraduate programme in architecture in Ontario.

The Study Group believes that the evolving nature of professional practice suggests that the additional numbers will readily be absorbed into the profession. Moreover, given the structure for professional education in architecture proposed by the ASPG there will be even greater opportunities for those students to advance their careers not only in architecture but also in many other related directions.

Consistent with the proposals for enhancing the individuality and distinctiveness of the existing undergraduate architecture programmes, it is proposed that the new programme be self-consciously designed to complement the existing programmes and to take maximum advantages of the particular opportunities and resources of the university involved. In response to enquiry by COU at the outset of this study, York University was the only university, other than those already involved, that indicated a potential interest in architectural education.

The Study Group believes that the particular resources of York University are well suited to the consideration of a new programme in architecture which would complement the anticipated developments of the existing programmes. Of particular significance are the evening programmes of Atkinson College, and the resources represented in urban studies, fine arts, science, environmental studies, administrative studies, and law.

It should also be noted that at the graduate level the subject matters of architectural studies and environmental design are integrally related in the Faculty of Environmental Studies.

The ASPG therefore recommends that:

R-61 The following intermediate-range actions or projects be initiated:

(a) York University give serious consideration to the introduction of an undergraduate degree programme in architecture;

(b) opportunities for focusing on the subject matter of environmental design, urban design, architectural studies at the graduate level, be continued.

R-62 For the long range, consideration be given to participation in the professional Master of Architecture programme.

5.2 Summary

The recommendations regarding modifications and additions to the various programmes in Architecture and their effect on enrolment, routes to registration, total time requirements to registration, etc. are all summarized in the following diagrams and charts.

Figure D - shows projected phased target total enrolments in all years of the undergraduate programmes in architecture.

E - shows projected phased target total enrolment in all years of the proposed graduate programmes in architecture. The only graduate programme that is considered to be immediately feasible is the existing MArch at the University of Toronto. For all four institutions it is proposed that the MArch (Professional), as recommended in section 4.1 of this Report, be considered as "intermediate range", i.e. the programme should be initiated within a 3-10 year time span. It is likely that the programmes would be introduced sequentially according to student demand and the degree of preparedness of the institutions. Probably the first programme would be instituted at the University of Toronto, followed by Carleton, with the University of Waterloo and Ryerson initiating their programmes somewhat later.

New academic master's programmes are categorized as "long range", i.e. beyond five years.

F - is a comparative diagram showing proposed modified undergraduate programmes in architecture in Ontario. It will be noted that for the University of Toronto the BA (Arch. Studies) may be terminal, or may lead to the BArch programme. The BArch, like the BES at Waterloo, the BArch at Carleton and the BTech at Ryerson may (a) be terminal, (b) lead to the MArch (Professional) degree or (c) may lead to other graduate programmes including the MArch (Academic).

G - is a diagram showing proposed modified programmes in architecture in Ontario and expected normal sequence of instructional time and work experience to meet OAA registration requirements. This diagram should be compared with Figure A.

Note here that on the basis of the "norm" of 4 years for the undergraduate programmes the total time to registration has been reduced to 7 years

H - is a graph showing cumulative instructional time and work experience in weeks from Grade 13 entry to meet OAA registration requirements via modified Ontario programmes. This diagram should be compared with Figure B. Note that the total time to registration for the basic four year "norm" programmes is now reduced to 245 weeks which compares with that of 250 weeks in the majority of programmes in Figure B.

FIGURE D

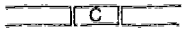
PROJECTED ENROLMENTS

UNDERGRADUATE PROGRAMMES IN ARCHITECTURE

	UNIVERSITY	DEGREE	PROGRAMME LENGTH (YEARS)	APPROX. TARGET ENROLMENT (TOTALS)
Immediately Feasible (2-5 years)	Toronto	BA (Arch Studies)	3	100 Studio Courses
		BArch	2	140
	Waterloo (integrated)	BEd	3	
		BArch	5 including 16 month co-op work experience	250
	(separated)	BArch	4 1/3 including 16 month co-op work experience	250
	Carleton	BArch or BEd (Arch)	4	350
	Ryerson	BTech or BSc (Arch)	4	480
Intermediate Range (3-10 years)	Waterloo (integrated)	BEd	3	
		BArch	5 including 16 month co-op work experience	350
	(separated)	BArch	4 1/3 including 16 month co-op work experience	350
	Carleton	BArch or BEd (Arch)	4	400
	York	*	*	*
Long Range (Beyond 5 years)	Ryerson	BSc (Arch)	4	800?

* ASPG has recommended that York consider the possibility of starting an undergraduate programme in Architecture. If it does so, enrolments will have to be projected in relation to the overall pattern.

OTHER UNIVERSITY COURSES



CO·OP WORK EXPERIENCE

LOGGED CO·OP WORK EXPERIENCE

ARCH UNDERGRADUATE

LOGGED WORK EXPERIENCE

UNIVERSITY and PROFESSIONAL SUPERVISED WORK EXPERIENCE

M ARCH (P) PRECEPTORSHIP

ARCH. CONTENT INTEGRATED IN OTHER U/G PROGRAMMES

* REGISTRATION

LEGEND THIS LEGEND REFERS TO FIG'S A, B, E, G, H.

FIGURE E

COMPARATIVE DIAGRAM SHOWING PROPOSED MODIFIED UNDERGRADUATE PROGRAMMES IN ARCHITECTURE IN ONTARIO

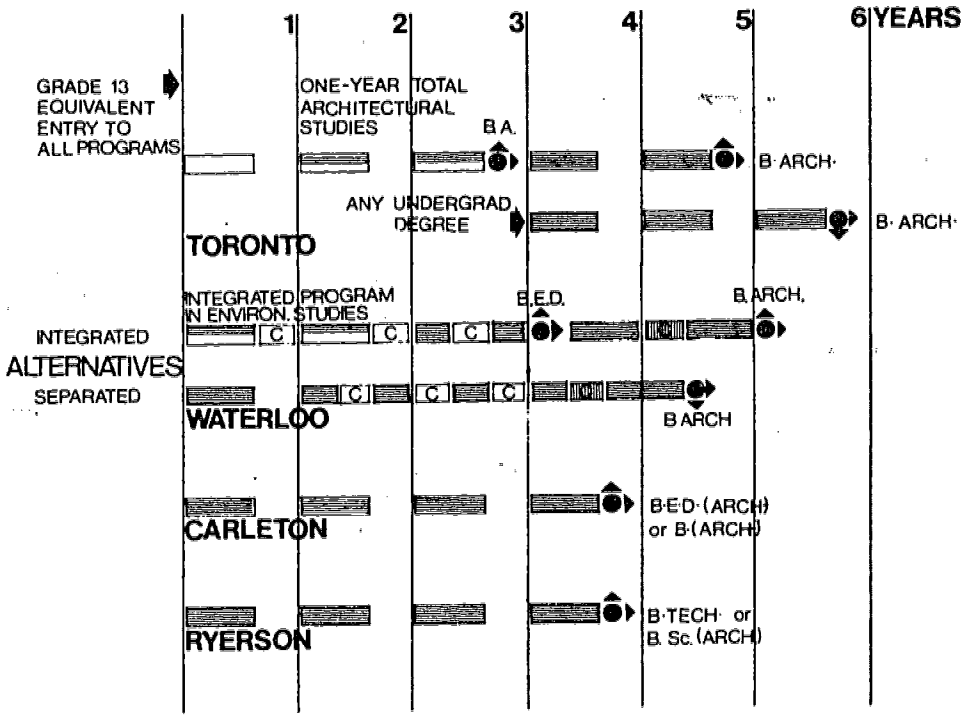


FIGURE F

PROJECTED ENROLMENTS

GRADUATE PROGRAMMES IN ARCHITECTURE

	UNIVERSITY	DEGREE	PROGRAMME LENGTH (YEARS)	APPROX. TARGET ENROLMENT (TOTALS)
Immediately Feasible (2 - 5 years)	University of Toronto	BArch (Academic)	2	20
Intermediate Range (3 - 10 years)	Toronto	BArch (Professional)	1	75
	Waterloo	BArch (Professional)		20
	Carleton	BArch (Professional)		45
	Ryerson	BArch (Professional)		60
Long Range (Beyond 5 years)	Toronto	BArch (Academic)	2	40
	Waterloo	Master's		?
	Carleton	Master's		20

FIGURE G

DIAGRAM SHOWING PROPOSED MODIFIED PROGRAMMES IN ARCHITECTURE IN ONTARIO AND EXPECTED NORMAL SEQUENCE OF INSTRUCTIONAL TIME AND WORK EXPERIENCE TO MEET OAA REGISTRATION REQUIREMENTS

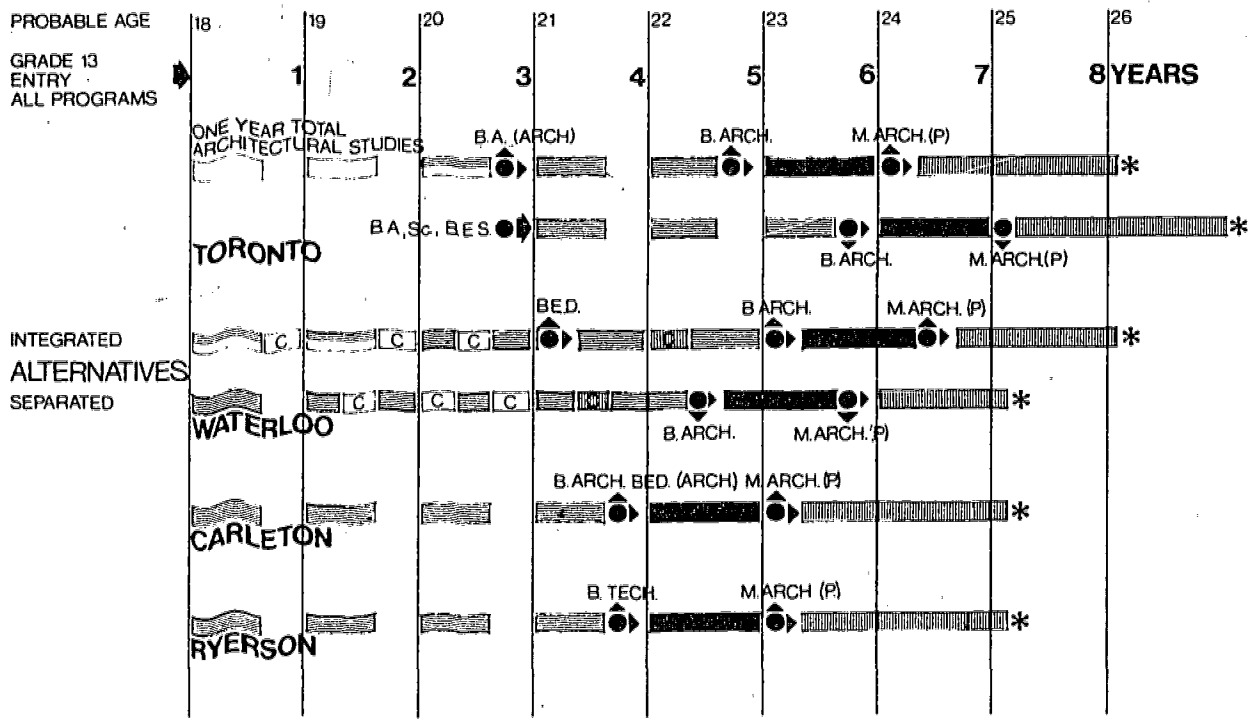
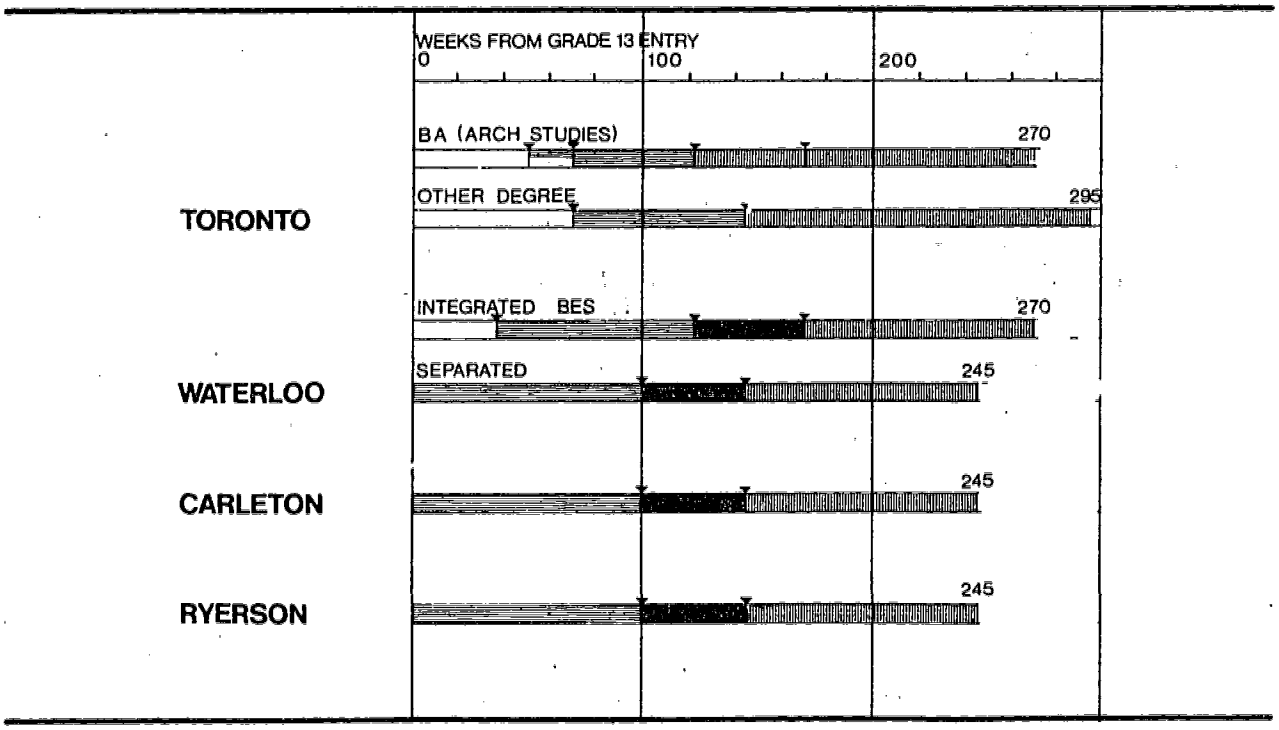


FIGURE H

GRAPH SHOWING CUMULATIVE INSTRUCTIONAL TIME AND WORK EXPERIENCE IN WEEKS FROM GRADE 13 ENTRY TO MEET OAA REGISTRATION REQUIREMENTS VIA MODIFIED ONTARIO PROGRAMMES



APPENDIX A

CURRICULUM VITAE

of the

CONSULTANTS

G U Y D E S B A R A T S

F.R.A.I.C.
Dean, Faculté de l'Aménagement, Université de Montréal

Education

Collège Sainte-Marie
Civil Engineering and Architectural Studies at McGill University
Bachelor's Degree in Architecture, McGill University, 1948

Career

1948-52	Work with Abra Balharrie and Shore, Ottawa, Ont.
1952-53	Grant from Central Mortgage and Housing Corporation to study postwar multiple dwellings in Montreal
1953-59	Teaching at McGill University with the rank of Special Assistant; organized and developed the Building Construction Laboratory for the School of Architecture
1953	Private practice with Ray Affleck
1954-70	Partner of the firm Affleck, Desbarats, Dimakopoulos, Lebensold, Sise, Architects
1964	Dean of the School of Architecture, University of Montreal, becomes dean of the Faculté de l'Aménagement, created in 1968
1968-70	Consultant with the firm Affleck, Dimakopoulos, Lebensold, Sise, Architects
1972-74	Chairman of the Board and President of Canadian Construction Information Corporation, Ottawa

Professional Associations

Province of Quebec Association of Architects
Ontario Association of Architects
Royal Architectural Institute of Canada (Fellow)

Publications

"Colour and Children", Architecture Canada, Journal RAIC, Vol. 26, April 1949, pp.109-110, 128-129.

"McGill Basic elements of visual design", Design workshop, 5th year, 1st term, Architecture Canada, Journal RAIC, May 1949, pp. 143.

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"Building Industry and Society", The Canadian Architect, May 1969.

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"Thoughts on Urban Research and Development", Bulletin, National Research Council, (Industry research university), Vol. 3, No. 2, summer 1971.

"Towards a university model: a structure for permanent evolution", University Affairs, Oct. 1971.

22/5/73

JOHN PAUL EBERHARD

President, The American Institute of Architects Research Corporation, Washington, D.C.

The corporation creates opportunities for research by the architectural profession in areas of complex problem solving related to the man-made environment.

Education

University of Louisville, Speed Scientific School, 1947.
University of Illinois, School of Architecture, B.S. Architectural Design, 1952.
Harvard University, Graduate School of Business Administration, 1958.
Massachusetts Institute of Technology, School of Industrial Management, M.S. in Industrial Management, 1959.

Awards

Midshipman, U.S. Navy Reserves (Holloway Program) 1947-49.
Alfred P. Sloan Fellowship, Massachusetts Institute of Technology, 1959.
Engineering News Record Citation as Construction Industry Contributor, 1970.

Memberships

Corporate Member, American Institute of Architects.
U.S. National Committee, International Council for Building Research, Studies and Documentation.
Environmental Design Research Association.
Association for the Advancement of Invention and Innovation.

Professional Experience

Dean, School of Architecture and Environmental Design, State University of New York at Buffalo, 1968-1973. Founded and headed a new School organized around the art, science and technology of building. School includes a graduate programme in Building Systems Design; an undergraduate programme in Environmental Design; and a continuing education programme in architectural studies.

Chairman of the Board, Building Science, Inc., Buffalo, New York, 1971-1973.

President, Buffalo Organization for Social and Technological Innovation, Inc., 1969-1971.

Director, Institute for Applied Technology, 1966-1968. The Institute has as its purpose the creation of opportunities for the application of science and technology to industry and government. Fourteen divisions included building research, computer sciences and technical analysis.

Deputy Director of the Institute for Applied Technology of the National Bureau of Standards, U.S. Department of Commerce, 1964-1966.

Consultant to Assistant Secretary of Commerce for Science and Technology of the U.S. Department of Commerce, 1963-1964. The principle responsibility of this position was one of recommending policies and programmes to be implemented under the Civilian Industrial Technology Program of the Department. This programme had as its intention providing funds for research designed to encourage industries like the building industry and textile industry to explore the use of more advanced technologies.

Visiting Lecturer, School of Industrial Management, Massachusetts Institute of Technology, 1959-1963. Responsible for conducting graduate seminars in Business Environment--a course which examines the socio-political development of United States and its relationship to the business environment through the medium of "great" books.

Co-Director for a research project sponsored by NASA which investigated the relationship between the work of research and development and the spaces in which the work is done.

Consultant, Sheraton Corporation of America, 1959-1963. Responsible for organizing and directing a programme of research for hotel chain to become versed on technological developments which might be utilized to improve the management and products of the company. The major activities were related to data processing technologies and their potential use by Sheraton as information handling tools.

Alfred P. Sloan Fellowship, School of Industrial Management, Massachusetts Institute of Technology, 1958-1959. Research centered on the concern for the role of design in a potentially highly industrialized building industry.

President and one of the Incorporators of Creative Buildings, Inc., 1952-1958. Firm began as a venture into designing and building medium-priced homes. It was converted early in its history to one which designed and manufactured prefabricated buildings.

Reports and Articles

"The Management of Design in an Industrialized Building Industry", unpublished Masters Thesis, Massachusetts Institute of Technology, June 1959.

"A Marketing Analysis of Portable School Buildings", a report to the Educational Facilities Laboratories of the Ford Foundation, June 1962.

"A Computer-Based Building Process: Its Potentials for Architecture", Architectural and Engineering News, Vol. 4, No. 12, December 1962.

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Architecture and Creativity, "Advent", (published by the Lutheran Society for Worship, Music and the Arts), Vol. 2, No. 2, 1960.

The City as a System, in "The Problem and the Potential; Proceedings of the Mid-American Conference on Urban Design", Kansas City, Missouri, March 1966.

Building Technology and the Design Process, in "Forces Shaping the Role of the Architect; Proceedings of the Second Boston Architectural Center Conference, ", May 1966.

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"Government Involvement in Standards", The Magazine of Standards, Vol. 39, No. 3 (USASI: New York, March 1968).

"Future Technology for Urban Systems", a report to the National Commission on Urban Problems, March 1968.

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BIOGRAPHICAL NOTES

BERNARD POLMER SPRING, FAIA

Born in New York City, 1927. Attended City Public Schools. A.B. degree (cum laude), University of Pennsylvania, 1949 (concentration in architectural history and design methodology). Master of Architecture degree (with honors), M.I.T, 1951 (concentration in building systems technology).

Design and engineering of ship structures, U.S. Navy Bureau of Ships, 1951-3 (Boston Naval Shipyard). Special graduate student, Dept. of Civil Engineering, M.I.T., 1951-3.

Fulbright-Hayes fellowship, the "Technical College" (Teknelinin Korkeokulu) Helsinki, Finland, 1953-4. Instructor, The Royal Academy of Fine Arts (School of Architecture and Planning), Copenhagen, Denmark, 1954-5. Consultant, Office of V. Lauritzen, Copenhagen, Denmark (design and contract documents, Danish Embassy in Washington, D. C.), 1954-5.

Faculty member (concentration in environmental technology, building systems, project management and design methodology): Massachusetts Institute of Technology, 1955-59; The Cooper Union, 1961-5; Princeton University, 1965-9. Director, Princeton University Research Center for Urban and Environmental Problems, 1965-9. Dean and Professor, The School of Architecture and Environmental Studies, The City College of The City University of New York, 1969-present.

Director, construction research, Weyerhaeuser Company, Seattle, Washington, 1959-61. Technology Editor, Architectural Forum (Time-Life), 1961-64. Contributing Editor, Architecture Plus (1973-present); Environment and Behavior (1969-present).

Senior consultant, Davis, Brody & Associates, Architects. 1960-present (concentration in preparation of proposals, programming user requirements, new building technology and preparation of planning and design reports).

BIOGRAPHICAL NOTES 9/74

BERNARD POLMER SPRING, FAIA

Board of Directors and Chairman of Zoning Committee, Citizens Housing and Planning Council of New York. Board of Directors, The Institute for Community Design Analysis, Inc., New York. Regional Director, Association of Collegiate Schools of Architecture. Member, AIA National Advisory Council on Continuing Education. Chairman, NYCAIA Architectural Schools Committee. Fellow, American Institute of Architects, Princeton University Council for The Humanities, The Institute for Architecture & Urban Studies.

Member of Building Research Advisory Board--NSF Committee on Solar Effects on Buildings. Member of NSF Advisory Councils on Twin Rivers Energy Utilization Study (Princeton University) and on New York City Schools Energy Utilization Study (R. Stein & Assoc.). ©HPC task force on HUD noise criteria and West Side Highway Study.

Publications include: M.I.T. Solar House IV, M.I.T., 1957; Building With Plastics, M.I.T., 1958; Design and the Production of Houses, McGraw-Hill, 1959; A Study of Education for Environmental Design, Princeton, 1967; Planning and Design Workbook, Princeton, 1969; and numerous journal articles.

On November, 1974, appointed by the Regents of the State of New York for a five-year term as a member of the New York State Board for Architecture.

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APPENDIX B

Report to the
Architecture Study Planning Group

Council of Ontario Universities

Prepared by

Professor Guy Desbarats
Dean, Faculté de l'Aménagement
Université de Montréal

April, 1975

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ANNEXES:

1. Critères de nomination - Ecole d'Architecture.
2. A University Knowledge System Model.

Bound Separately:

- Towards a university model: A structure for permanent evolution, Guy Desbarats, University Affairs.
- Prototype Structures for Improving the Management of Knowledge in the University and its Environment, Faculté de l'Aménagement, Université de Montréal, October 1969.
- The Structuring of a Modern University, Faculté de l'Aménagement, Université de Montréal, October, 1969.
- Résultats provisoires des travaux touchant aux usines et laboratoires, Comité de programmation du nouvel édifice, November 1970.

INTRODUCTION

The comparison between different schools of architecture is made difficult because of the wide differences in organizational strategies adopted by architectural teachers.

In my experience as an administrator of architectural programmes, it has been evident that this proliferation of strategies relates to the difficulty of achieving a satisfactory synthesis of necessary knowledge inputs with the development of aptitudes for the type of decision-making required in architectural practice.

It has been my opinion for many years that the concentration, by schools of architecture, on these fascinating strategies, have caused them to neglect to maintain a balanced contact with the university and outside world environment of basic knowledge.

It is now clear to me, after many years of puzzlement, that this neglect is occasioned also by another and more substantive level of complexity in the task facing the architectural educator: that of the breadth of the spectrum of knowledge that architectural activity must necessarily draw upon.

It is interesting to note that the three basic characteristics of any work of architecture, accoring to Vitruvius, "commodity, firmness and delight" considered in terms of what specific knowledge context is required to achieve a satisfactory solution, can be related (broadly!) in modern "knowledge systems" terms, to the social sciences, the physical sciences, and the arts and humanities; that is, to the whole broad spectrum of the basic sciences and humanities resources of a university. If any consider this an exaggerated claim, kindly reserve judgment until, later in this paper, a more detailed demonstration of actual architectural school behaviour can be made.

It appears therefore that architectural schools can probably claim that they are the only professional or society problem-solving area of the university, attempting to apply an integration of such a broad area of knowledge resources.

I know with certainty, however, that because of their particular biases and strategies, that schools of architecture cannot also claim to be doing the best job of basic knowledge transfer to the applied sector in their universities.

It seems to me then that evaluation of schools of architecture, whether for purposes of relative evaluation of individual development planning, or of institutional or mutual interactions, must be firmly based on an understanding of the strategies adopted, first for the transfer of basic knowledge and second for the integration of that knowledge into applied, synthetic learning situations. The first understanding that I have sought has then related to these two types of strategies and to their linkages.

To help in this understanding, I have used, as a methodological approach for the present task, a series of models, developed by myself and other members of staff in my faculty, which correspond to the above observations and which I have presented briefly in Annex 2 of this report.

It is my hope that the use of these models will provide some firm ground, which can allow us to discern what is truly similar, and what is usefully different in the practices of the Ontario schools of architecture.

A really satisfactory discharge of the mandate proposed to the consultants would require a far longer period of time than that allowed, particularly

with respect to any quantitative analysis of the information, acquired through school visits or documents submitted by the schools. I have chosen then to concentrate on qualitative understanding and upon recommendations of a general nature, when quantitative factors are involved.

It will be obvious to the reader that I have not been neutral, unbiased or even modest in my recommendations, which are largely based either on successful experiments within my own faculty, or upon ideas for desirable initiatives which I have not succeeded in implementing myself, but which, through the particular opportunities available to them, the Ontario schools could perhaps readily achieve.

Unfortunately, I have not found the Ontario schools of architecture to be in a frame of mind to seek opportunity, or to be in a very effective position to seize it; the reasons for this, in my opinion, relate not only to the present very difficult financial climate, but to more fundamental and endemic problems native to the architectural academic community.

I have also sought better understanding of the congruency of schools of architecture with their immediate university environment; the idea of academic fit or "academic normalcy" which I find particularly lacking in schools of architecture - not only in Ontario - but almost everywhere, will be explored for possible understanding of some problems of the schools under review.

As our mandate did not include any specific study of the relationship between the profession and the schools, any remark or recommendation bearing on this subject will be made from personal general experience,

as a member of both the Quebec and Ontario professional bodies and as an educator responsible for relations with five different professional associations.

Two other types of problems in the relationship of the schools with the outer environment are considered in this report, the first with the other related professions of intervention upon the environment, the second upon the whole enormously difficult question of numbers of students, relative to admissions and to career opportunities. Both my observations and recommendations on these two subjects will again be based on present personal opinions rather than upon any new data.

Because of the brief one and a half day visit to each school, I greatly fear that I may have misinterpreted some of the information received, and that unjust assessments may have resulted. For these, I apologize and hope that the collective wisdom of your committee might correct such errors, before damage occurs.

UNIVERSITY OF TORONTO - SCHOOL OF ARCHITECTURE

The University of Toronto School of Architecture is undergoing a particularly critical phase of its history!

A long period of Pedagogic experimentation, accompanied by administrative tensions, has brought the school to the point where a situation of psychological siege, a beleaguered mentality, prevail. It is, however, my firm opinion that the present pedagogical strategy employed by the school is of high quality and presents possibility of a continued improvement.

Whatever the reasons behind the failure of the Faculty of Architecture, Landscape Architecture and Urban Planning, the problems left behind in the school of architecture appear to me to be the following:

- Administrative isolation, due partly to the lack of understanding between heads at the school and at the faculty level, over the past many years; but probably also equally due to intense concentration upon internal questions, at the expense of the whole-university context, on the part of the present director.

- Pedagogic experimentation on a total scale, with the strategy of the core programmes. This strategy, if I understand it correctly, places the major pedagogical emphasis on the practice of synthesis. The acquisition of necessary knowledge and information inputs is mainly orchestrated according to the needs of the studio process.

This approach seems to be particularly well suited to the needs at the undergraduate level.

The system varies from other more conventional types by percentage of time on core studio programmes, by the regrouping of some formal (but with attempts at better timing in relation to core programmes) course work into what other schools call sub-system laboratories or workshops.

The light mandatory and elective course work is simply an expression of the balance of work that cannot be introduced to satisfy the methods or the timing needs of the core studio programme.

A big problem of evaluation and control arises concerning any assessment of the quantity and quality of specialized knowledge fed into the process of class or individual development.

Much seeking of this specialized knowledge is left to the individual student's and the studio master's initiative.

This total approach presents great opportunities for dynamic learning, whether of team or of individual.

It also seems to correspond to the exploratory urges and information seeking ability of the present products of the secondary schools.

However, such a strategy could lead to perpetuation of a professional group's weaknesses.

Many staff members appear to be left out of the informal circuits existing in the school, with the result that few students follow elective courses, given by these professors.

One wonders if these methods will help students seek out balanced diets of knowledge inputs or help the school to organize systematically such knowledge inputs: it does not appear that the development of existing mandatory and elective courses follows a real set of objectives related to a structured development of knowledge transfers.

I believe that the profession of architecture deeply needs to be better "plugged-in" to the world's existing and conventional knowledge systems. I believe, furthermore, that architectural undergraduate programmes must provide the profession with more than one type of architectural graduate, even now, before the profession has accredited any precise specializations. I think that these exist already, and that any architectural school that ignores it, does at some loss to itself and at real detriment to the profession.

In theory, a school of architecture operating within a university as complete as the University of Toronto, should acknowledge as limits to its organized basic knowledge scan efforts only the energy of its staff members, and its ability to find knowledge transfer staff. In practice, in the present financial position of the school, and Ontario universities generally, the older schools are apparently in a more difficult position than the newer schools to compete for development funds within their university; they will have to choose their priorities with care, and should coordinate them with the other schools.

Staff:

The staff at this school appears to be profoundly divided on the issue of the above described strategies. Those who relate to the more conventional

areas of knowledge, i.e. those that have, and are still developing in a specialized way, find it very difficult to introduce their contribution. Conversely, the core programme organizers tend to seek out, on an ad hoc basis, readily available resource persons, who are not necessarily key persons in the knowledge area under study.

Staff members at Toronto all admitted some serious lacunae, here or there in their hoped for recruiting of these needed inputs. Nowhere in the administrative or development organization of the school did I find a plan or strategy to improve this situation, or yet much perception of this factor as a problem: the existing relationships are either accepted as ad hoc, random, and satisfactory; or in the case of staff members who have not accepted the present strategy, result in the mutual process of rejection, that is very wasteful of staff and destructive of institutional good health.

A great problem exists therefore, due to tenures and in a no-growth economy; an answer might be to re-cycle this internally isolated staff by re-directing, by re-training and by more coherent knowledge input strategies, such as minor options re-grouping of electives, such as re-desi,ning of entire graduate studies as described below to give in-depth specialization possibilities at graduate level, thereby giving opportunities for growth to the few specialists in the faculty.

On the other hand, the core programme experimentation appears to have had a success here that it has not had in other know examples. It has been achieved by creating a homogeneous student block through admissions policy and by creating an apparently very homogeneous teaching group within the faculty, at the price of rejection of some faculty members suited to the experiment. This is in effect a "total" pilot-project. It can only be judged as relevant or not on a basis of acceptance of its single-purposed objective: the production of a graduate as well drilled as possible in the art of architectural synthesis.

The concept does allow for some ad hoc individual specialization of low order of definition, through electives, but the school has not developed packages of electives or groups of teachers related to them.

The concept is therefore limited in its objectives and does not seek to respond to the problem of educating variously for the full range of activities possible within architectural practice. As the mark of one school among many, however, the experiment will certainly produce a strongly characterized graduate who, together with the sheer quality of the selected students, through the wealth of resource of University of Toronto and by the complete devotion of the group of staff members committed to the core programmes, may well impose themselves as usually valuable members of the profession.

They will certainly have received no less knowledge input than the present generation of practitioners; they will be better prepared to the complex art of architectural synthesis. Some may perhaps not have acquired an understanding of the rigour that is required to build new knowledge within other disciplines, basic or applied, and the distance between them and conventional academic wisdom will probably not be narrowed. The accusation of glib and amateur use of other disciplinary knowledge, made by other disciplines upon architects, may continue a while longer.

It seems to me that, without any great alteration of the school's main working strategies, a concentrated effort to improve staff quality, and management, in the areas of structured knowledge inputs, that would make them more evidently consistent and more clearly rewarded, would eventually give the school a very strong position indeed on the Canadian scene.

In view of the spirited defence by staff and director of the success of this core programme experiment, the development plans of the school are unexpected, and appear to me to be contradictory.

It is proposed to abandon the undergraduate programme as it now exists, and to retain only a graduate programme, at the masters level.

Also, it is proposed to offer to the university an undergraduate programme in environmental design that would provide the necessary undergraduate underpinnings for the graduate programme in architecture, and service a broad university need for an educational, in general "design" synthesis and creativity.

It is striking to me that the present graduate programme is small, inadequately thought out and staffed and has no attractiveness whatsoever to local graduates, or to members of the profession. It is not designed to train researchers or to build up professional knowledge systematically.

It is also striking to me that the school has no administrative experience either with general undergraduate degree programmes (and little formal contact with such programmes elsewhere in the university) and little experience or success with graduate programmes, and yet would propose a strategy that destroys the very daring experimentation of recent years, to replace it with two programmes, entirely new, for which it has no administrative or pedagogic experience of much relevance: a very dangerous strategy. Also, the development plans of the faculty do not mention the heavy staff overload required to run the two programmes concurrently, as would be required during a transition period of four years duration: a major financial hurdle.

The dismemberment of the faculty, that is imminent, is a regrettable

event, which my mandate does not require me to judge. I can surmise, however, that this event is certainly related in some way to the all-engrossing pedagogic strategy chosen by the school of architecture as its central organizational principle. It explains also the ease with which the school staff and director are prepared to abandon links with landscape architecture.

Communications with other university components are very difficult to maintain in the absence of any acceptance of what I call "university normalcy", for want of a better term.

The total commitment to the core programmes and the ad hoc approach to other university knowledge areas make it very difficult to maintain institutional links with such conventionally structured individuals as the economists, sociologists and engineers involved in planning programmes, or even with the other disciplines, such as landscape architecture, not espousing the commitment.

I believe that the founding of the faculty was based on a correct premise of shared knowledge system and resources between all the disciplines involved in intervention upon the built environment; that architecture (most of all perhaps) stands to benefit from economies of resources shared with programmes of landscape architecture, of industrial design, or urban design, of building sciences, of urban and regional planning and structural and mechanical engineering as applied to buildings.

The loss of faculty status or participation will isolate the school of architecture even further than it is now, into a university ghetto.

The isolation proposed of landscape architecture within forestry is an

unfortunate one, at a time when, for example, the Province of Quebec Council of Professions is about to propose the regrouping of the two sister architectural professions; at a time also when some architects (and the discipline of architecture) need to develop their understanding of concepts of biology and of ecology, together with landscape architects.

It is to be hoped that a principle can be found in the future development of the school of architecture at Toronto that will re-open many lines of communication on a regular academic, structure, buildable basis; the only kind that survives the alarums and excursions of university-life.

It appears that the faculty has failed primarily through the lack of an effective, substantive academic leadership; evidence is sufficient elsewhere to demonstrate the soundness of the concept of environmental professional regrouping, where it has been developed with realistic understanding of knowledge systems context and functioning; it can only be hoped that new energy will be found to begin to build outward from the school of architecture the linkages that perhaps had not even begun to exist in the faculty.

Research:

The almost complete absence of even semi-organized research activities in the school is evidence of the absence of a "knowledge growth need" awareness. Research work in specific areas is moving fast around the world, and Toronto's school of architecture is not much involved at all. This is due, in my opinion to the over-concentration on strategy at the expense of substantive knowledge seeking. The recommendation I am making concerning knowledge system organization may well help in this regard over future years.

Students:

Students at Toronto were not met alone but the impression retained is one of solidarity with the aims of the administration, great self-reliance and not a little pride at the satisfaction of being among the chosen. They, and some staff members, did not appear to wish to discuss or explain their school with an outsider. It was explained to me that this is perhaps a result of the frequent scrutiny that the school has been subjected to in recent years.

Among the data submitted it appears that the dropping-out ratio is quite high; one can surmise that the system requires great self-confidence on the part of students and a strongly focused sense of vocation.

Students in other schools of architecture visited reported strong disagreement with University of Toronto School of Architecture admissions policies, particularly concerning the individual interviews. This type of interviewing, it may be noted, is no longer allowed at the undergraduate level in many universities, particularly in Quebec at the present time; they are objected to on the grounds of being undemocratic in a state financed situation, and serving only to reinforce biases of staff groups that are not necessarily vehiculing approved university policies.

The development proposal submitted by the school, recommending that it become attached to the faculty of graduate studies and yet at the same time organize resources and dispense an undergraduate design programme, including studios, with the assistance of an affiliated college, appears to me to be quite impracticable. The energy required of staff for graduate level teaching would leave them no time or motivation for undergraduate teaching.

According to answers to my question, the needs expressed by University of Toronto staff to transform the undergraduate programme into a graduate programme, correspond to the demand of roughly 20 - 25% of the student population, for transfer due to changes in career motivations, etc. Therefore roughly 75% of students are satisfied with present arrangements.

The cost to society of a transfer of this large body of students to the graduate level, for the sake of satisfying a minority need is, to me, unacceptable. Other less global strategies can be found to satisfy the minority.

The development plan does not describe how staff requirements will be met during the transitional phase, lasting four years, when staff will be required for both the full undergraduate programme, and a fast growing graduate programme. Many new and almost unobtainable staff positions would be required. I shall, in the recommendations suggest an approach which would permit the school to build up from its present experimental programme, without destroying it, towards the achievement of some of its broader objectives.

RECOMMENDATIONS

1. The programme is good and must go on with corrections only to its strategies, as recommended in 3. below.

2. Give faculty status to the school of architecture alone, as a vehicle for the development essential to its survival (the school can keep its name, as school of architecture, but its director must have dean status).

3. The school must proceed to a much closer examination of its handling of basic knowledge links, of engineering sciences, management sciences, planning sciences links and all other inputs, and must evolve strategies for this, as sophisticated as its knowledge synthesis methods.

4. Staff re-training, re-directing and replacement policies must be made explicit, acted upon and reviewed regularly (I understand the absence of means in Ontario re: this policy; local solutions and special pleadings will have to be used).

5. The administrative direction of the school, which has been largely inturned in recent years, must become more knowledgeable in internal university administrative affairs and attitudes.

6. Experimental laboratories and workshop facilities are badly needed - as in most schools of architecture.

7. Redevelopment plan:
   a) It is recommended that the present undergraduate B.Arch. programme be maintained, and be reduced by one year in length.
   b) It is recommended that the present 5th year studio type core programme be made one stream or profile of a revamped master's programme.

c) It is recommended that undergraduate minors groups of electives be defined: (i) either in answer to clearly expressed professional or social needs, and relating to core programmes, or (ii) in terms of knowledge base; i.e. building sciences and behavioral and social sciences, planning sciences, design sciences.

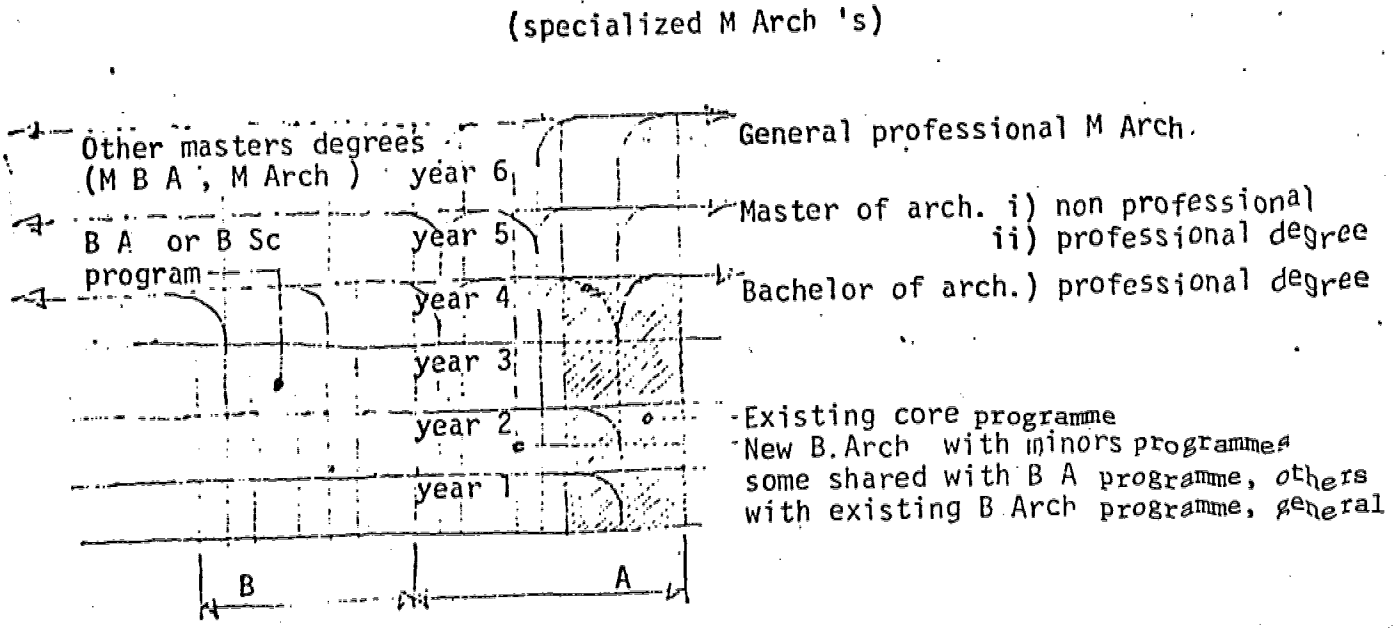
d) It is recommended that University of Toronto school of architecture, having selected as its main specificity - design synthesis or integration and the development of creativity, should progressively develop more electives in these areas, and begin to offer them as minors' packages to Faculty of Arts and Sciences or colleges before developing, as it proposes, an undergraduate bachelor of arts programme.
(The launching of a full-pledged programme would test its administrative capacity and resources beyond hope.)

e) The post-graduate masters degree level programme, must be developed through a re-statement of objectives, according to the various options described in the general recommendations below, selected from among those envisaged for the whole Ontario network of schools of architecture.

8. In view of the extensive humanities resources of the university, and in view of the motivation present at the school, to go in the direction of an undergraduate BA design programme, the architectural masters programme could emphasize resources build-up in that area, (i.e. possibility of history of architectural technology).

The school may not wish to emphasize its building science resources to the point of institutional specialization, and need not create a graduate specialization in this field, but could complement a humanities orientation, with stronger resources in the behavioral science area; this type of selection of special emphasis can help establish coherence and complementarity among the schools in Ontario.

9. Suggested development model



A. First development stage

B. Second development stage

RYERSON POLYTECHNICAL INSTITUTE - ARCHITECTURAL SCIENCE PROGRAM

The architectural science programme given within the Department of Architectural Technology at Ryerson, raises the fundamental question of the need for a fourth school of architecture in Ontario. I am of the opinion that Ontario does need this new architectural programme, that its graduates will easily find employment within the profession and other areas of the building industry. The general orientation expressed in the documents studied suggests that the programme has an orientation that is more complementary than competitive with that of the other three schools of architecture in Ontario.

The programme has, however, not yet attained a quality equivalent to that of the schools at Carleton and Toronto universities. Staff resources, both in terms of numbers and overall academic standing and experience, do not match the other two programmes, or that of Waterloo.

Both staff and Ryerson resources are weaker than the other institutions in terms of social sciences, humanities and behavioral sciences. Staff have been unable to embark on more than the most limited amount of research or practice activities, less than the level achieved in the other institutions; this may be due to both work load and to lack of training and/or appreciation for the necessity of reflective or knowledge seeking activity at the university level. Programme weaknesses are evident through the medium to poor quality of student studio work, and through such problems as the lightness of 4th year workload for students.

The curriculum can and must become more substantial before full university level recognition should be given to this programme.

On the other hand, the aim of providing a four-year professional architectural programme in Ontario, admitting grade XIII candidates, is entirely feasible in my opinion, providing a selection of candidates is made such as to eliminate the need to provide elementary mathematics or sciences within the first year.

A characteristic objective, frequently re-stated in the documentation provided, concerning the major goal of "reflecting changes in the industry" and of concentration on "problem-defining" process, appears to me to water down the goal of reflexion and study upon an area of knowledge, i.e. research orientation. This may not be meant, but some of the difference between a technical school and a university lies there.

A second criteria for acceptance of the programme as of university level, would lie in a strengthening of its staff with more specialists holding advanced degrees, balancing a weightier assemblage of professionals of experience, the latter particularly on the architectural design-studio side.

The staff to student ratios at Ryerson are particularly low compared to the North American averages and to the other Ontario schools. This is probably a cause of some of the weaknesses observed. These should be brought to the level of the other schools before recognition of full school of architecture standing.

The parallel programmes in building sciences and project management offer excellent opportunities of support and promise much for the future of the department of architectural technology; the presence of landscape architecture seems less explainable, but comment upon it does not form part of my mandate. Staff recruiting in this area seems, however, to have been rather heavy, in a time when the architectural programme

objectives would appear to require more rapid recruiting.

The development plans, as submitted, are not well conceived. The possibilities of graduate studies are so far off in the future that the department would do better to concentrate on very detailed elaboration of objectives, concerning the next phase (5 years) development plan of improvement of the existing undergraduate 4-year programme.

The library is not adequate for university standards.

The department is housed in an excellent building, in a good urban location. I did not visit it entirely and will not hazard further comment on its adequacy.

RECOMMENDATIONS

1. The programme should continue to plan to grant a university-level architectural degree, within a few years, as soon as staff ratios, staff qualifications, and variety should be on the average, equal to that of the other three schools.

2. The curriculum should continue to strongly develop its major technological and building science orientations while enriching its social and behavioral science and humanities inputs. Detailed future development plans should concentrate on this area.

3. The numbers of students admitted should be held down while the staff build-up occurs, to accelerate achievement of acceptable ratios, in terms of studio assistance, and in terms of specialized staff.

4. Fourth-year curriculum particularly requires enrichment.

5. It is recommended that a new evaluation be made in two or three years time in order to verify degree-granting capability.

6. The library must be substantially improved and its standards checked by specialists as recommended elsewhere in this report.

7. It is recommended that research activities and equivalent experience of practice should be encouraged by all means among the faculty, before any thought is given to the development of graduate studies.

CARLETON UNIVERSITY - SCHOOL OF ARCHITECTURE

The Carleton University School of Architecture is relatively free of major problems at this time. Its patterns are well documented and relatively simple to evaluate.

The problems it has can most likely be described as endemic to the nature of an architectural school in Ontario today.

Management has kept a balanced eye on internal and external environments of the school, staff is fairly experienced for such a young school - students are generally relaxed and involved.

Physical plant is excellent, though insufficiently equipped with laboratory facilities, and offers no expansion space.

The library is not easy to assess as it is centralized at Carleton; school management and staff do not take a close enough interest in the development of this resource.

The perceived problems are very much those described in the documentation provided by the school: looseness in the handling of electives, that may allow weakness to develop in some students in terms of basic knowledge requirements in the limited professional sense. Tighter regrouping and clearer objective setting is needed, perhaps in the form of definition of "minors".

An inadequacy in the numbers of specialist trained staff, and in the quality of some service staff shared with, or provided by, other faculties can be noted.

These are both "endemic" problems in architectural schools - and lead to a perception by base disciplines, that architectural schools "dabble" in their areas. Much hard work (in staff training) and information sharing, and even staff sharing between schools of architecture will be needed to overcome this, to my mind, very real deficiency.

Since it appears that staff training and re-training programmes and budgets are not available to Ontario schools of architecture, strong representation will have to be made at all levels to correct this deficiency.

The Carleton University School of Architecture enjoys a good reputation within its university, but even more defining and explaining of its position regarding the seeking of basic and even of applied science resources needs to be done with its neighbour disciplines.

Some detail problems are treated in the recommendations that follow, and are self-explanatory.

It is in the area of development planning, which Carleton has thought out at length and painstakingly that the greatest number of questions arise:

The Carleton School of Architecture has taken the path of education for architectural role diversity, and has laid down an excellent, if demanding programme in answer to that main strategy. It has achieved its first set of objectives, and reached a plateau, or "steady state".

It now proposes, in a well laid-out document three major academic strategies: first, the tuning-up of its present course offereings, in

terms of major and minors - which I agree with entirely and will not comment on further; second, the creation of a new large-scale programme in environmental design, at the undergraduate level; and third, a master's level programme; both of which require comments.

The most serious difficulties occur with the undergraduate programme. The first question that occurs to me concerns the main motivation behind the proposal: to increase the number of students in the department and therefore income, on formula financing, while not using much more space. Yet this proposal raises contradictions in the text: on p. 22 of the Draft Development Plan, February 1, 1975, it is stated that student candidates "want professional programmes", i.e. that are practical and job-oriented.

Yet I fear that the general "environmental-design" degree will be founded on insufficiently defined knowledge-basis and would lead to even more vaguely defined job-opportunities.

The students at Carleton indicated to me that they were worried about future work opportunities. It is perhaps significant that the students at Ryerson indicated a contrary opinion, because they consider architectural technology to be very marketable (or is it because Toronto offers more job opportunities?)

Furthermore, the paragraph on p. 18, describing "career objectives to develop environmental design professionals who could take their place as full participants on design teams in complementary and supportive roles to the established design professional, e.g. architects, engineers, planners, etc...", describes to me the creation of a second class of design citizens trained alongside an elite.

I fear greatly that such a programme would lead to dissatisfaction, unless the two above objections can be resolved.

The list of streams envisaged for incremental development presents various difficulties, for instance, applied ecology staff is almost non-existent, and generally comes from biology or chemical engineering; applied ecology is not yet a discipline: I see it as a graduate, multi-disciplinary exploration. Man-environment relations is a rapidly developing science, based upon psychology and anthropology, still, in my opinion, ripe only for graduate student specialization; sufficient material for a light "minor" could probably be assembled soon at Carleton, but at some risk of lack of credibility; a doctorate is certainly required by a staff member teaching in this area. Urban planning is a complex subject, moving in as many directions as there are institutions teaching it. It offers a useful subject of graduate study for architects, among others.

On the other hand, undergraduate urban and regional planning, property management and development, and building science, all offer good potential as undergraduate programmes, and I see no reason why they should not be identified as such. It can be noted that these three programmes are not really design-oriented in the strict sense (as is urban design).

It is very important, in my estimate, to distinguish between common knowledge resources and clear programme or stream identification: if such is meant in the proposal, then I am in support of it. In any event, it appears to me that there is much knowledge systems confusion present in the proposal.

The whole numbers question must be faced, in the schools of architecture,

in the face of statements, as on p. 50, of the same document, where "...phasing out or reducing the BArch programme can if necessary be achieved...".

Two approaches are open in the face of the student pressure: first to grow as quickly as possible while attempting through all strategies possible to increase studio efficiency, and so respond to pressure of admissions and to propose enough new schools in Ontario to keep improving response while pressure lasts: that was the engineering faculties' strategy of the post-war years, to the great benefit of the professions.

Another approach is to proceed to difficult and often inconclusive market analysis. My own faculty has been trying to proceed on both these fronts, and has sought to create as many alternative real career opportunities as possible in recognized newer professions.

The second major initiative concerns graduate programmes. I am in strong general agreement with the masters of architecture proposals - with this comment that it would require the elimination of 5th year to make it viable, particularly with reference to route (A).

Also, the complete proposal implies a considerable undertaking requiring a long-term institutional commitment and financial resources for back-up labs and libraries, hardly yet available in embryo at Carleton. Priorities will have to be set: I may venture to suggest that Carleton's priorities should orient a choice to architectural design, property management and development, urban planning, then urban design, in that order. Visual design and communications should properly be a field for industrial design to develop.

The real problem in the proposal arises with the vague nature of the knowledge system to be developed for the master's in environmental design. This becomes very experimental and depends entirely on the success of

the as yet uncertain undergraduate programme and staff recruiting. The objectives proposed appear to me to belong in a university interdisciplinary research centre, which may be able to allow participation of specific undergraduate degree students in inter-disciplinary projects.

I will not comment on other remaining portions of this Draft Development Plan, beyond stating my support in principle, with full recognition of the difficulties, in terms of university staff management traditions that they imply, concerning staff activities inside and outside the universities.

RECOMMENDATIONS

1. Staff specialization, training and re-training programmes need to be instituted, even if financial assistance and leave is difficult to obtain.

2. Seek university administration assistance in obtaining best quality service teaching staff.
(Quality of sociology service course must be improved; professor used is considered "marginal" by his department).

3. Optional course selections must be brought into more coherent groupings; recommended "minors" approach is excellent. "Professional" package, and non-professional can then be defined in ways that prevent conflict with Ontario Association of Architects.

4. Select and state clearly broad objectives of school within possible range of specialization - relating to resource base particular to Carleton University and relate these objectives to packages of options creating "minors", to other disciplines, and to graduate programmes.

I suggest emphasis on a management orientation, and an economic orientation, within accepted professional disciplines already in place, i.e. architecture and industrial design, and offering to arts and science students "minors packages". I recommend that priority of development be given to the multiplication of options within the professional programs before non-professional general degree programmes are started.

5. The new general degree programme desired should be restricted to clearly designed "majors", such as property management and development, building science, and undergraduate urban and regional planning, which are not specifically design-oriented. Students in these programmes could elect to take "minors" in design. Staff resources required to develop such programmes are considerable, and must be supplementary to existing resources. Good motivation of staff is also essential.

6. Develop graduate studies (masters) only when specific strength of staff (specialization) is clearly established.

7. School of architecture to keep close watch on institutes and centres being formed at Carleton as possible source of social problem-oriented basic scientists who could be attracted to teach service courses or special courses relating to a basic discipline at the school and that could also provide an interdisciplinary locus for graduate student research.

8. Library growth must be related more clearly to development of objectives of specialization of staff. Also staff "literacy" deficiency must be remedied by more aggressive administrative control of course bibliography development; by acquisitions policy committee of staff, regularly attended by director of school. (More discussion on this subject needed in school.)

9. School should try to conform more completely to academic administrative norms of rest of university, (i.e. course credit calculation) in order to facilitate student mobility re: course options.

10. School needs internal joint staff - student review board to settle grade disputes.

11. I recommend study of adoption of 4-year programme - to help make way for masters programme (do not attempt this on top of 5-year programme).

The profession should be invited to take on the responsibility of organizing complete graduate-level programme in professional practice subjects, in collaboration with the school in order to lighten the 4-year curriculum.

12. I recommend re-grouping of university resources in urban planning toward a new management and real-estate oriented urban design, and planning graduate programme (with strong urban - design - management re-grouping) in lieu of general environmental design; this could be organized from present school base, before new undergraduate degree.

13. Growth of enrolment should be limited to specific progress of definition of modules:
    1. Urban design and urban management - at graduate level
    2. Real estate and building management - at undergraduate level
    3. Minors at undergraduate level;

    and should be conditioned by possibility of improving quality of present staff and obtaining new staff possessing specific characteristics.

UNIVERSITY OF WATERLOO - SCHOOL OF ARCHITECTURE

The School of Architecture at Waterloo University, though the second oldest in Ontario, after the school at the University of Toronto, is the one that has to face some of the most difficult problems; this, despite the loyal and strenuous efforts of its staff and director.

I have found it easier to see the problems than to discern their cause; some of my recommendations will be based, for that reason, on judgments which will be backed by not much more than intuition or at most very light evidence.

The programme as presented is well organized and systematic, it is easy to understand and discuss and this is a minor relief for the quick assessor!

The staff members that I met offer quite satisfactory intellectual qualities, most have advanced degrees, and appear to be utterly devoted to the school.

However, the school is, first, starved for financial resources. This is not necessarily evident from a direct comparison, say with the programme (non-university) at Ryerson; and not evident also until one understands the lack of support from the university or faculty administration, that is undermining the programme.

It is my opinion that out-going dean of the Faculty of Environmental Studies did not understand programmes in architecture and provided an almost hostile, or at least very unsympathetic environment for the school. Budgetary allocations and numbers of staff positions are there to confirm that impression, which was given to me directly by the out-going dean himself.

The architectural library resources are almost non-existent.

The building is too small, and generally inadequately equipped; there is no space for laboratories.

But also, the school does not seem to benefit from much supporting intellectual activity or participation from the rest of the university; there is no social sciences contribution for instance. Planning has more than ever, here, gone to geography and economics, and the non-urban oriented interests. I did not get the impression of a favorable university climate for a school of architecture, even in terms of the intellectual interests of other disciplines in the faculty. I was much surprised that the systems design department did not have more relation with the school of architecture born as it was out of their midst. Perhaps this is case of child rejection.

In any event, the students' morale is extremely low. Students ask point blank if the programme should not be shut down for lack of resources. Some are leaving the school, and yet the students here are all top A-grade students, as in the other schools.

It is significant that the students complain of lack of urban thrust in the programme. I detected a low urban thrust in limited contacts with the activities of the other departments of the faculty.

I wonder if a school of architecture can be effectively supplied in such conditions with the varied intellectual resources and urban focus required for it to thrive at all?

It is my contention that professional schools do not operate well in

faculties dominated by the fundamental sciences: the staff attitudes, management attitudes and pedagogic traditions all differ too widely to reconcile.

The problem of expensive tutorial approach in studios, the staff-student ratios prevalent in the better North American schools of architecture are all better understood by administrators of other professional schools than by administrators of arts and science type undergraduate

The numerical smallness of the architectural school within the faculty of environmental studies at Waterloo also makes it more difficult to adjust to the management approach used to run the rest of the faculty. A bigger, more powerful school might be able to fight back more effectively and gain its rightful share of budgets, but such is not the case here.

The orientations given by the present director, though entirely acceptable in a more favorable climate, compound the problem: the school has been steered in "professional" and "design" directions.

The students expressed some hostility at this approach, as lacking in intellectual content, and falling into arbitrariness. This sort of criticism is bound to hit a school where the intellectual diet is not rich enough for top students.

The students complain bitterly, of course, about the lack of studio-time contact with professors, due, as seen above, to the high student-staff ratio, and also due to the cooperative system, which keeps staff on duty for three semesters.

It is evident that a sufficient range of strong specialist staff has been very difficult to recruit. The ecology stream for example is upheld by one architect staff member this year, following the loss of a specialist formerly available. Very positive response was given to the suggestion of specialist staff being trained and hired jointly by more than one school, thereby giving practical meaning to a network organization for the Ontario schools of architecture. The question can legitimately be asked whether Waterloo is too far from resource centres to attract the relative scarce resources needed to complete the range required by an architectural curriculum?

This question leads to that concerning the specificity that the Waterloo school does or should possess, in relation to its particular university environment.

One could expect that suitable resources in ecology, man-environment, systems design and computer design orientations could be exercising a stronger influence in the school, and satisfying more fully the students aspirations for stronger intellectual exercise.

The humanities appear to be well taken care of in the cultural stream; the social sciences are not strong at Waterloo and represent an important weakness in the curriculum.

The above specialized knowledge areas do not represent areas that a more traditionally professional approach tends to promote in architectural education; there is perhaps here a conflicting motivation between the dominant ideology or spirit in the school, and the ideology more widely prevalent in the rest of the university, hence some of the misunderstanding.

In view of the pressure of admissions in Ontario, in view of the presumed need for at least all the graduates produced at present by the four schools and departments of architecture in Ontario, I think that the Waterloo school should be given a fair chance, but only if it is given essential resources on one hand, and itself proposes ways to better relate administratively and intellectually to the rest of the university.

RECOMMENDATIONS

1. The strong backing of the Architecture Study Planning Group and other useful support that can be obtained to demand budgetary increases necessary to bring staff-student ratio to 1 to 10.

2. The hiring of well trained staff in science-based areas selected to increase school specificity and fit in the University of Waterloo context.

3. Arrangement of shared appointments, or visiting lectureships with other schools, when not possible to obtain own resources in priority areas.

4. Obtaining immediate commitment on the part of the faculty and university to provide a library build-up of reasonable importance over 3 years, according to standards set-up by library investigation proposed elsewhere in this report.

5. The provisions of additional, if need be temporary, space near the present building, until new building can be provided when future of school is assured.

6. That the school be closed down if these recommendations are not acted upon during a 3-year period with clear indication of degree of institutional commitment right from first year.

GENERAL RECOMMENDATIONS

1. Definition of knowledge areas need to be made more explicit for all schools of architecture.

2. Seminars must be arranged to exchange development orientation, i.e. a network needs to be developed around each such subject (knowledge area development).

3. These knowledge area subjects could tend then to become the subject of areas of specialization - generally as undergraduate minors with the professional stream programmes, as in Carleton proposal.

4. The minors can then lead (in academically normal way):
   a. To specialist diplomas for professionals at graduate level, or
   b. Can lead to research masters degrees in similar specializations, and
   c. These streams can eventually lead to doctoral studies (in the proposed Ontario network) as doctorates already exist in a number of these areas in other countries (building sciences, urban design, man-environment, etc.).

5. Division of staff into three categories recommended in our document "Critères de nomination - Ecole d'Architecture" (Annex 1), should be envisaged, or at least into the two main basic categories, and nominations and promotions criteria re: higher degrees and experience (professional or teaching) settled for each according to generalist, generalist-specialist or specialist of:
   a. resource discipline, or
   b. problem area of teaching.

6. Rare specialist staff to be shared by appointments between many schools.

7. A joint doctoral programme for all Ontario schools of architecture will have to be envisaged once master's programmes are under control (not for 7-8 years).

8. Staff-student ratios must be kept near the same level in each school.

9. Laboratories have to be coherently developed in all Ontario schools (see Annex - "Rapport du comité de programmation du nouvel édifice, résultats provisoires des travaux touchant aux usines et laboratoires").

10. I recommend transformation of 5th years of architectural schools into master's programme, design orientation (as Carleton's type proposed).

11. With abolition of 5th years, I recommend the reorganization of much of the so-called professional practice training, to be given by universities, in collaboration with the profession, at post-graduate level, during indenture periods, as continuing education programmes. These courses to be very complete, and very much supported by the profession; they should also be near-standardized between all schools.

12. Each school to set up its staff evaluation methods and to compare notes annually.

13. Schools to set up staff training and re-training programmes and to request funds to activate this.

14. All libraries (except Toronto) need very special funding to come up to minimal level.
    I recommend that ASPG get an expert opinion on this problem, the situation appears critical in three schools.

15. Much more description of objectives needed for course work particularly,

and also for studio work: objectives must be written - course comparison by title or description is very difficult.

16. I recommend that ASPG become permanent and run continuous assessment and evaluation for all Ontario schools - by means of the annual seminars.

17. Research development must be encouraged by gradual specialization of staff, by stricter control of "experience" or practice activities. These must be given equivalent credits and incentive of time and freedom, to encourage more fundamental research.

18. I recommend study to answer numbers problem at admissions and size of school by means of a study of type of Vergès study (report due in two weeks; copy will be forwarded then).

19. General development attitudes recommended:

    a. Toward "academic normalcy" in development plans.
    b. Toward development of relationships with a clearly established pattern of existing environmental design disciplines already recognized by society, before broad general degrees are attempted. Electives can be offered at this period to the general university degree programmes.
    c. Then only, toward general degree in arts and sciences.

    Schools of architecture don't yet have know-how or sufficient staff recruiting potential to get involved in general arts-sciences programmes and do not have type of resource on staff that would be very acceptable to this type of student.

    d. Toward rigourous post-graduate activities in specific:
        1. resource disciplines (man-environment, ecology, etc.);
        2. in basic design disciplines; quantitative methods and theory of management science, building science, planning science, design science;

3. in specialized areas of applications (urban design, health care, educational facilities, etc.

e. Toward long term plan to produce doctoral programme for all Ontario, to produce researchers and teachers.

20. Invite occasional related disciplines - landscape, industrial design, interior design, urban planning, to attend educational seminars. Attempt to work on knowledge systems comparisons with them to establish areas of collaboration: this is a prime function of architectural school management.

Ontario, for the time being, no longer has to hope of an effectively organized complete faculty of the professions of environmental design, leading to exchanges of ideas and methodology and mutual interation on a day to day basis, and must therefore put energy into alternative strategies of relationship; looking forward to the day, when the whole network will function as such a complete faculty.

21. All schools must attain high academic standards to satisfy top quality students, at risk of putting them off for long (bad reputation can easily be gained here by architecture).

POST-SCRIPTUM

This report was prepared under conditions of haste and in odd moments stolen among administrative chores.

I realize, upon re-reading, that relations with the profession have barely been commented upon: may I only say here that I think that it is high time that schools of architecture should contribute more new knowledge, and knowledge structuring to the profession.

I also would have liked to write more about architecture's relations with the neighbouring professions of design; these relations need much clarification, which I think the universities can give.

Also, it would have been a fascinating study to analyze in more detail the fit of each school within its own university: I hope each will do this more energetically in future.

The schools of architecture should consider much more seriously the impact of the high quality of student being received by them lately: this bonanza may create a great let-down for the future, if architectural schools do not reach quickly and maintain the intellectual standards sought by these students.

ANNEX I

CRITERES DE NOMINATION - ECOLE D'ARCHITECTURE

PREAMBULE

Depuis quelques années, l'engagement de professeurs à l'Ecole d'Architecture pose continuellement des problèmes administratifs à un point tel que chaque engagement devient un cas particulier.

D'après les statuts de l'Université, les critères de nomination (règlements) sont du ressort du Conseil de la Faculté. En 1972, nous avons entrepris la révision des critères employés depuis la création de la Faculté, dans le but de les rendre plus conformes à la réalité des trois programmes d'études. Cette révision n'a jamais abouti; des objections sérieuses ont été émises par la direction du personnel enseignant (cf. lettres de Mlle Barcelo du 21 août et 22 novembre 1972). La base de l'objection était à l'effet que tout professeur devait avoir au moins la maîtrise.

Cette obligation de la maîtrise engendre des problèmes conjoncturels et de fonds.

1. Depuis 1965 et de façon plus accentuée depuis 1971, la très forte majorité des professeurs se sont spécialisés et donnent leur enseignement dans les secteurs de connaissances, profil de carrière correspondant au profil universitaire type. Comme résultats, nous avons une pénurie de professeurs dans le secteur des centres d'intérêt et une dévalorisation de l'enseignement de ce secteur.

2. En architecture, architecture paysagiste et design industriel, peu de diplômés québécois et francophones font des études supérieures; la maîtrise dans ces domaines n'existe que depuis quelques années;
   le marché du travail ne valorise pas la maîtrise;
   les études sous-graduées sont de 4 années et antérieurement (1968) de 5 années;
   le marché du travail est habituellement bon et attire rapidement tout diplômé récent;

il n'y a aucune spécialité reconnue par l'Ordre des Architectes ou les autres associations professionnelles.

3. Une proportion assez élevée du personnel enseignant est de langue d'origine autre que le français.

4. Le bassin de recrutement pour les programmes en architecture du paysage et design industriel est très restreint.

5. Les besoins en ensiegnement demandent des profils d'enseignants différents. La compétence requise pour l'enseignement des connaissances de base est très différente de celle requise pour l'enseignement en design. Etant orienté vers la résolution de problèmes de design, l'enseignement en design requiert une solide expérience professionnelle de la part des enseignants.

6. Certains enseignants en fonction depuis quelques années n'ont pas encore de statut de professeur.

7. Quelques professeurs se voient imposer des exigences de perfectionnement lors de leur renouvellement de nomination, alors que ces exigences n'apparaissaient pas dans leur premier contrat.

8. De jeunes professeurs entreprennent des études de maîtrise sans que ce type de perfectionnement soit le plus adéquat pour les besoins de l'Ecole.

PRINCIPES

1. Etablir une correspondance entre les besoins et les critères de nomination (profils). A des besoins différents, (types d'enseignement) correspondent des critères différents.

2. Associer aux profils de carrière les critères d'évaluation de l'ensei-

gnement et le genre de perfectionnement requis.

3. Etablir une meilleure base pour la définition d'un profil de carrière pour tout nouveau professeur et pour l'identification du profil de carrière de chaque professeur en place.

4. Un professeur changeant de profil de carrière devra se plier aux exigences du nouveau profil. Dans ce contexte, il est possible que la maîtrise devienne obligatoire.

DESCRIPTION SOMMAIRE DU PROGRAMME DE L'ECOLE ET DES TYPES D'ENSEIGNEMENT

Le programme d'ensemble de l'Ecole pour le 1er cycle comporte quatre secteurs d'enseignement:

1. Le stage d'introduction
   But: sensibilisation aux problèmes de l'environnement et de son aménagement.

2. La formation de base
   But: développement d'aptitudes de base au design portant principalement sur la perception, la créativité, la logique et la communication.

3. Les centres d'intérêt
   But: développement des capacités nécessaires à la résolution de problèmes dans les domaines de l'aménagement des espaces et du design d'objet: programmation de travaux, identification de problèmes, formation de concepts, évaluation de solutions, développement de solutions, communication des résultats et la manipulation de l'information.
   Les centres d'intérêt servent de lieu de développement d'aptitudes au design, d'identification et d'application des connaissances nécessaires à l'action, d'étude de problèmes et la

formulation de solutions, de travaux pluridisciplinaires.

4. Les concentrations

But: acquisition des connaissances essentielles à l'action dans le domaine de l'aménagement des espaces et du design d'objets.

De ces quatre secteurs, se dégagent globalement trois types d'enseignement.

Premier type: enseignement relié au:

- développement d'aptitudes de base en design;
- développement d'aptitudes spécifiques en design et à la résolution de problèmes selon les champs de pratique.

Deuxième type: enseignement relié au:

- développement d'aptitudes à l'analyse dans le domaine de l'aménagement des espaces et du design d'objets;

- à l'acquisition de connaissances spécifiques aux sujets d'intervention.

Troisième type: enseignement relié:

- à l'acquisition des connaissances de base essentielles à l'action dans le domaine de l'aménagement des espaces et du design d'objets.

CRITERES DE NOMINATION

1. Premier type d'enseignement

Enseignement relié au:

- développement d'aptitudes de base en design;
- développement d'aptitudes spécifiques en design et à la résolution de problèmes selon les champs de pratique.

1.1 Par rapport aux exigences de base

Le professeur doit:

1.1.1 être qualifié en design
et/ou en développement de solutions;

1.1.2 bien connaître l'ensemble des facteurs inhérents au processus de design;

1.1.3 bien comprendre le rôle de la discipline dans la société et les exigences qui en découlent;

1.1.4 bien comprendre le rôle et les exigences de l'enseignement;

1.1.5 avoir de bonnes aptitudes en pédagogie;

1.1.6 travailler avec rigueur.

1.2 Par rapport aux critères normés (1)

Le professeur doit:

1.2.1 posséder un premier diplôme professionnel dans les disciplines du design;

et avoir i) soit au moins 4 années d'expérience professionnelle et au moins deux années d'enseignement;

ii) soit au moins 8 années d'expérience professionnelle;

iii) soit un diplôme de maîtrise et au moins 2 années d'expérience professionnelle.

L'évaluation de l'enseignement devrait se faire à partir de critères découlant des exigences de base.

Perfectionnement (2)

En fonction de ce type d'enseignement, le perfectionnement devrait se faire soit:

- par un contact soutenu avec la pratique, professeur à demi-temps; (3)
- par un stage de 6 mois à un an dans la pratique après 3 ans d'enseignement. (4)

2. Deuxième type d'enseignement

Enseignement relié:

- au développement d'aptitudes à l'analyse dans le domaine de l'aménagement des espaces et du design d'objets;

- à l'acquisition de connaissances spécifiques aux sujets d'intervention.

2.1 Par rapport aux exigences de base

Le professeur doit:

2.1.1 être qualifié en analyse et planification;

2.1.2 bien connaître l'ensemble des facteurs inhérents au processus;

2.1.3 être compétent dans un ou des domaines de connaissances essentielles;

2.1.4 bien comprendre le rôle de la discipline dans la société et les exigences qui en découlent;

2.1.5 bien comprendre le rôle et les exigences de l'enseignement;

2.1.6 avoir de bonnes aptitudes en pédagogie et en recherche;

2.1.7 travailler avec rigueur.

2.2 Par rapport aux critères normés (1)

Le professeur doit:

2.2.1 posséder un premier diplôme professionnel

et avoir i) soit un diplôme de maîtrise
et au moins deux années d'expérience en recherche
et/ou en enseignement;

ii) soit au moins 8 années d'expérience professionnelle axée
principalement vers l'analyse et la recherche dans
le domaine de l'aménagement des espaces et du design
d'objets.

iii) soit un doctorat.

L'évaluation de l'enseignement devrait se faire à partir de critères découlant des exigences de base.

Perfectionnement

En fonction de ce type d'enseignement, le perfectionnement devrait se faire:

- soit par des études de doctorat;

- soit par des stages spécialisés en recherche de 6 mois à un an après trois années d'enseignement. (5)

3. Troisième type d'enseignement

Enseignement relié:

- à l'acquisition des connaissances de base essentielles à l'action dans le domaine de l'aménagement des espaces et du design d'objets.

3.1 Par rapport aux exigences de base

Le professeur doit:

3.1.1 être compétent dans un ou des domaines de connaissances essentielles;

3.1.2 bien comprendre le rôle de la profession et les exigences qui en découlent;

3.1.3 bien comprendre le rôle et les exigences de l'enseignement;

3.1.4 avoir de bonnes aptitudes en pédagogie et en recherche;

3.1.5 travailler avec rigueur.

3.2 Par rapport aux critères normés (1)

Le professeur doit:

3.2.1 posséder un premier diplôme professionnel;

et avoir un diplôme de maîtrise dans une autre discipline et au moins 2 années d'expérience de recherche et/ou d'enseignement;

3.2.2 posséder un doctorat ou les exigences de base de la discipline d'origine.

L'évaluation de l'enseignement devrait se faire à partir de critères découlant des exigences de base.

Perfectionnement

En fonction de ce type d'enseignement, ce perfectionnement devrait se faire:

- soit par des études de doctorat;

- soit par des stages spécialisés en recherche de 6 mois à un an après trois années d'enseignement. (5)

(1) Les exigences de base doivent se traduire en caractéristiques qu'un professeur doit posséder. Certaines caractéristiques constituent des critères minima obligatoires et objectifs. Nous les avons appelés "critères normés". D'autres constituent des critères supplémentaires qui nous permettent de choisir le meilleur candidat parmi tous ceux qui répondent aux conditions des critères normés; ils sont plus difficiles à évaluer, ils peuvent varier selon les fonctions à remplir et ils sont spécifiques. C'est la base de l'analyse qualitative des candidats.

Ces critères sont, entre autres:

- les oeuvres réalisées;
- les travaux de recherche;
- les publications;
- les responsabilités assumées;
- le type de travaux professionnels;
- le rayonnement;
- etc.

(2) Il faut souligner qu'il s'agit bien de perfectionnement et non des fonctions régulières du professeur. Les divers types de perfectionnement indiqués ne sont que des suggestions préliminaires. Il faudrait en étudier toutes les implications opérationnelles et faire quelques études de cas avant d'en faire des règles administratives.

(3) Un professeur à plein temps, pour se recycler, pourrait opter pour un détachement à demi-temps pour un an qui lui permettrait d'entreprendre des travaux professionnels tout en conservant son poste d'enseignant et une demi-charge. Ce type d'arrangement ne peut pas être valable pour tous les professeurs.

(4) Un professeur, pendant au moins 6 mois et à plein temps, effectue des travaux professionnels pertinents à son enseignement et conduisant à des résultats sous forme de réalisation, de rapport ou de projet détaillé. Ce stage pourrait se faire:

- soit à l'intérieur de l'Agence-Ecole si celle-ci est éventuellement créée; à ce titre, le professeur conserverait son plein traitement;

- soit à l'intérieur d'une agence privée comme consultant; à ce titre, s'il reçoit un plein traitement de l'agence, il devra être en congé sans solde pour la période.

L'intégration éventuelle de la cléricature des étudiants diplômés à l'intérieur du programme d'études universitaires contribuera à créer une autre situation qui élargira l'éventail des stages possibles.

(5) Un professeur, pendant au moins 6 mois et à plein temps, effectue des travaux de recherche pertinents à son enseignement et conduisant à des résultats sous forme de rapport et/ou de publication. Ces travaux de recherche peuvent se faire soit:

- avec l'aide de subventions de recherche;
- à l'intérieur d'un contrat de recherche;
- à l'intérieur d'une agence ou centre de recherche.

Il est entendu que cette obligation ne supplée en aucune façon à la fonction usuelle de recherche de l'enseignant; elle définit une base minimum d'encadrement de son perfectionnement.

ANNEX II

A UNIVERSITY KNOWLEDGE SYSTEM MODEL

As mentioned in the introduction to this report, and briefly stated, a model was assumed, based on the idea of a fundamental iterative learning situation, feeding back from experience to new knowledge and back again, described in terms of communications networks of a school of architecture working within a university, and in contact with the world of practice. The model was originally developed to permit comparison of knowledge inputs between ours and other applied sciences or professional areas, and to clarify a number of management problems arising in the Faculté de l'Aménagement at the Université de Montréal.

In our model, the school of architecture (or Faculté de l'Aménagement) is likened to a scanning device, seeking basic knowledge within the knowledge system, and seeking also problems requiring solution within the real-world field of interest.

The main task of a school of architecture, in terms of curriculum design, being to relate, in pedagogical strategies, the problems selected to the means for their solution.

Architectural educators over the past century at least, have attempted to maintain communication with first the physical sciences, directly or via the engineer, the humanities through studies in history, and the arts, essentially the visual arts. More recently, and following new applied developments in these areas, the behavioral and social sciences have become an area of much new and useful resource material for architects.

Lack of interest in economics is a weakness traditionally ascribed to our profession, which most schools have tried to correct. More recently, semiotics, computer science, ergonomics and anthropometrics have been visited for meaningful contributions to the architects solutions. In other words, practically the whole knowledge horizon seems to be included in the scanning process.

Beyond a minimum amount of priority setting, usually in favour of the physical sciences and engineering, schools of architecture are ressorting to practically random inputs of information, in reaction, I suppose, to the complexity of the task.

Our model proposes implicitly that a systematic structuring of knowledge channels is a necessity, and that priorities and strategies of transfer must be established.

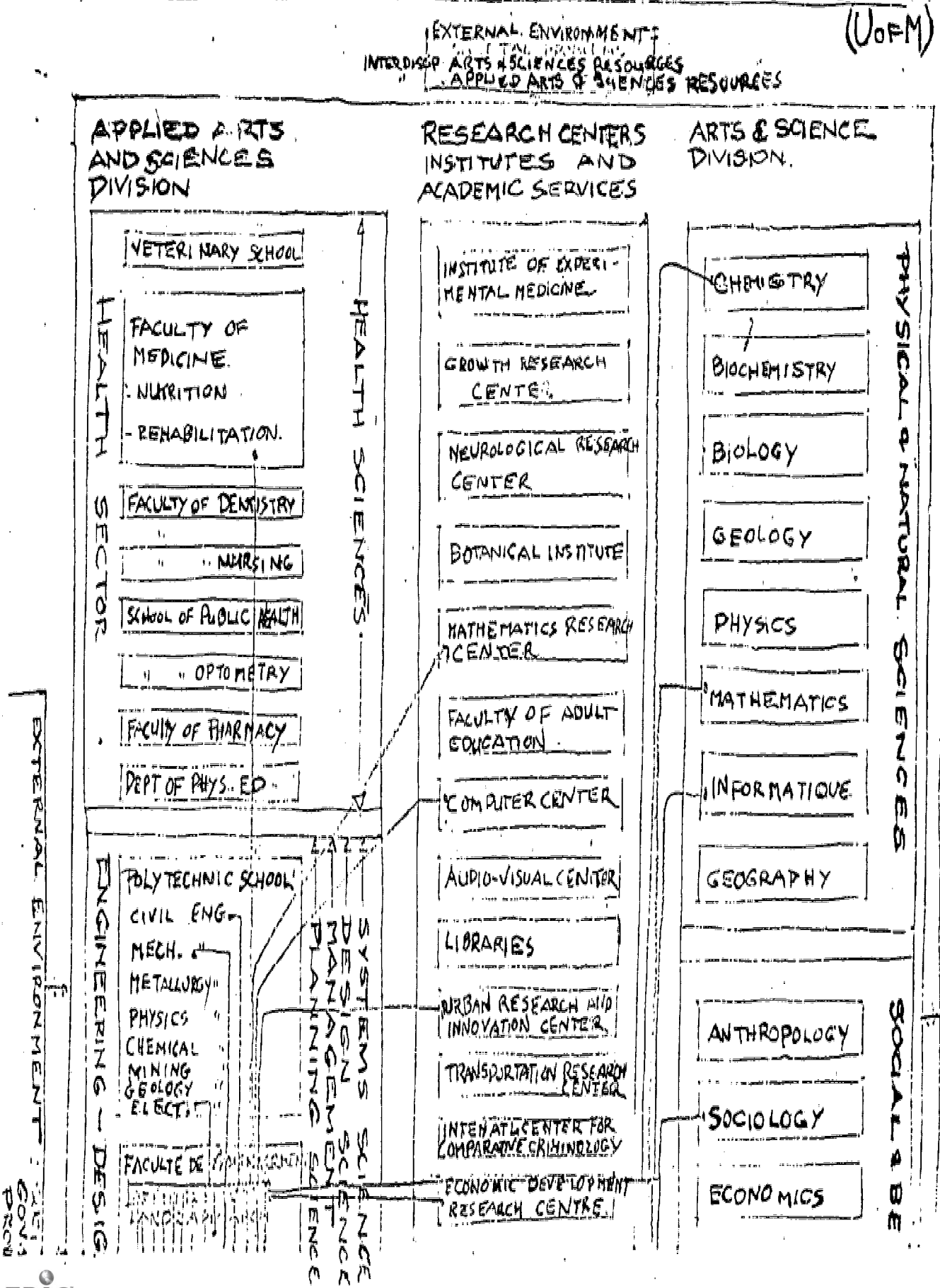
Such priorities and strategies exist in all other applied sciences and professional areas of the universities. Engineering, for example, scans a wide range of basic science disciplines, all among the physical sciences, with mathematics, but separates its departments, hence its sub-disciplines, principally on a mono-science base, thereby effectively simplifying (or over-simplifying) the knowledge synthesis that must be achieved in terms of pedagogical method. Engineering schools are returning to a "design" orientation, and are sensing a growing inadequacy in human and social terms. We can look forward to growing difficulties in their approach to the synthesis of their program offerings. Until their sympathy reaches us (as it begins to in documents like the Rosenstein report, U.C.L.A.), we must fend for ourselves.

Meanwhile, in the hope that more useful exchanges could occur between schools of architecture, if an analysis of their practices in term of the direct use and transformation of basic science information, or of the indirect use of information already transformed by other applied sciences or professions, were facilitated in order at least:
- to select complementary institutional priorities,
- to select corresponding staff,

to explain schools of architecture to the university and the profession.

I offer the following basic diagram, which fits my own university, but which is just a model that each can re-cast for his own institution. In fact, interesting games develop from this model, which academics can play for long and enjoyable hours!

THE THREE MAIN ADMINISTRATIVE DIVISIONS OF THE UNIVERSITY (UofM)



ACADEMIC INTERACTIONS OF

B - 56

SCHOOL OF ARCHITECTURE (Cont'd)

SCIENTIFIC AND CULTURAL ASSOCIATIONS AND SOCIETIES

SOCIAL SCIENCES

INDUSTRIAL DESIGN

SCHOOL OF COMMERCE AND MANAGEMENT

PUBLIC ADMINISTRATION

INDUSTRIAL R... DEPT

LAW FACULTY

DEPT. OF CRIMINOLOGY

SCHOOL OF SOCIAL SERVICE

LAW - ADMIN COMM SECT.

DEPT. OF LINGUISTICS

LIBRARY SCHOOL

FACULTY OF MUSIC

FACULTY OF EDUCATION

ARTS & COMMUNICATIONS EDUCATION SECT.

COMMUNICATIONS AND ARTS

INSTITUTE

MONTREAL ECOLOGICAL RESEARCH CENTER

UNIVERSITY MANAGEMENT SYSTEMS RESEARCH

BIOLOGY RESEARCH STATION

CENTRE FOR POLL RESEARCH

PEDAGOGICAL INSTITUTE N-D

SCHOOLS DOCUMENTATION CENTER

QUEBEC CENTRE FOR PSYCHOEDUCATION

CENTER FOR APPLIED PSYCHOLOGY

INSTITUTE FOR MEDICAL STUDIES

AFRICAN STUDIES

JEWISH STUDIES

CARIBBEAN STUDIES

TERMINOLOGICAL DATA BANK

SOCIAL SCIENCES

DEMOGRAPHY

PSYCHOLOGY

POLITICAL SCIENCE

ARTS & HUMANITIES

HISTORY

FRENCH STUDIES

ENGLISH STUDIES

MODERN AND ANCIENT LANGUAGES

PHILOSOPHY

THEOLOGY.

EXTERNAL ENVIRONMENT
SOCIETAL PROBLEMS -
INTERDISCIPLINARY: ART & SCIENCE RESOURCES
APPLIED ARTS & SCIENCE RESOURCES.

This model tries to make visible a kind of rough topology of university knowledge systems.

Some of the most useful interactions, in terms of the management of architectural education, appear in the engineering, environmental design (aménagement) law and administration sectors. These represent the area of most dense interaction between what I have termed the "basic applied sciences": design, management, planning and systems sciences.

These are being developed in application across a wide range of decision making, relevant to the solution of problems, ranging from the material to the human and social. This area contains many overlaps, or grey areas, in terms of problem scan and/or knowledge scan areas.

The ability of academic administrators to manage the touchy areas of overlap may well depend on the kind of understanding that such models can help contribute.

The model can be studied to draw many kinds of insights. I shall not elaborate on these in this report, for the sake of brevity, but include in annex a number of papers more or less explanatory of the model's intent.

The main use of this model, for the Architecture Study Planning Group, may well be in attempting to clarify an Ontario architectural education network, or system, that might help to bring about a more significant academic group presence for the schools of architecture in Ontario.

APPENDIX C

Report to the
Architecture Study Planning Group

Council of Ontario Universities

Prepared by

John Paul Eberhard

March, 1975

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APPENDIX A

INTRODUCTION

This report is the result of a commission by the Council of Ontario Universities. Dr. R. J. Rossiter, the Chairman of the Architecture Study Planning Group, in writing to me to ask me to serve explained:

> "The Council of Ontario Universities have established an Architecture Study Planning Group to make recommendations concerning the orderly development of education in architecture in the Universities of the Province of Ontario. The Council of Ontario Universities represents the fifteen Universities in the Province and Ryerson Polytechnic Institute. At present there are four undergraduate programs in Architecture, at Carleton University, Ryerson Polytechnic, University of Toronto, and University of Waterloo, and one master's program at the University of Toronto. There are no PhD programs."

During January, February, and March of 1975, I visited each of the four schools involved and met with faculty, students, and University Administrators. I spent approximately one and one-half days at each school so that my observations were limited by time; however, I believe they were adequate for the purpose. I see the purpose as one of personal observation and reflection based on my experience, rather than any attempt at detailed analysis or scholarly study. The ASPG will have sufficient data and background material from their own studies without my adding to it. I saw, therefore, my role as one of stimulating discussion within the ASPG about serious alternatives. For that purpose, I have adopted a posture of personal views and comments, rather than a detached reporter of the facts.

After my January meeting with Dr. Rossiter and Mr. Hansen, I made some notes to myself which provided a background for my visits. These notes follow below:

1. Things to think about along with providing ASPG a good report:

Some thinking about the role of the University in society - especially the role which such an institutional format can and has played in preparing those who practice architecture. E.g., Did the University provide any better setting (or even sufficient) for acquiring the tools of the trade than working in an office (was it worth the price in terms of impact on wages). Did the University provide prospective architects with a "view of the world" that made them more inclined to become "professionals" than those who

have not been in the University. (Professional being one whom society can hold responsible as an individual for the advice or service he provides.) Did the University raise the "design skills" of the student versus non-student, or is it likely that the designer would by inclination and/or temperament go to University if at all possible. Did the University "broaden the design concepts of the student" by exposing him to inputs other than visual characteristics. E.g., The concept of linking human requirements or economics to design character.

In other words, is University education over-valued in our society based on middle-class myths about the importance of University education to getting ahead in the world. Or, more importantly, is the true value of the University to the individual and/or to society in the maturation, basic understanding, broadening, and self-confidence aspects of education. If so, does a concentration on architecture tend to make no difference or reinforce or interfere with these aspects.

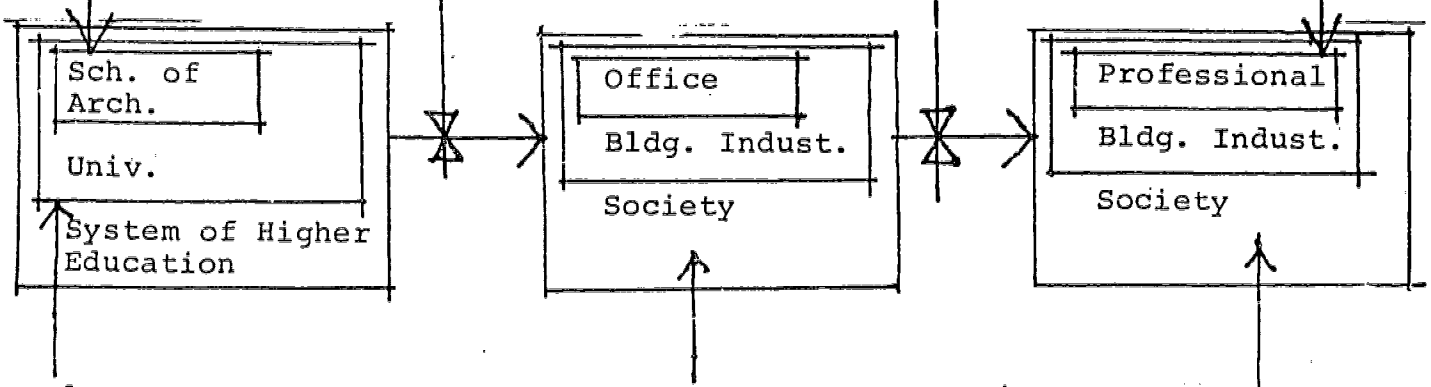
2. And what about the future of the profession? Ontario seems to be blessed with a large number of skilled and probably well-educated practitioners. They probably are ahead of the general run-of-the-mill firms in the U.S., so they may act as a leading indicator of the direction of the profession (not in economic terms so much as in professional roles and aspirations). There is also the opposite side of the coin which is determined by the students now in the schools and what they see themselves as doing ten years from now professionally. (There is also the interesting question of what those with non-professional aspirations think they may be doing.) To both of these forces are added the changes which will likely occur in the building industry in the next ten years and how these forces will affect the role of the architect. (See following diagram)

Students

- Previous Education
- Aspirations
- Parental Pressure
- Society Pressure
- Faculty Pressure
- Peer Group Pressure

Professionals

- Experience/Type of Work
- View of their Role
- Economic Status
- Relationship to Employees



Educators

- Previous Experience
- Aspirations
- Outside Activities
- Administration Pressures
- Peer Group Pressures
- Student Pressures

Policies & Economics

of Canada
Ontario
Profession

Regulations

- Employer Tax
- Business Rules
- Banking Rules
- OAA Rules
- License Laws
- Building Codes
- Zoning
- Other Ordinances

Administrators

- Experience
- View of the World
- View of Administration
- Relationship to Faculty
- Relationship to Students

C. THE SYSTEM OF PROFESSIONAL EDUCATION AND TRAINING

PREFACE

Since my report is intended by me to be a personal one -- with all my weaknesses and strengths contributing to the result -- I though the reader should have a quick summary of my personal history. My own career, I believe, mirrors the general direction of change in the field of Architecture. It also reflects on the diversity of professional roles possible for one who is educated in an Architectural School:

- Summers of 1948 and 1949 worked for a Gothic church architect in St. Louis.

- During 1950 and 1951 worked part-time for an architectural firm doing commercial and educational buildings.

- In 1952 graduated from the University of Illinois with highest honors in Architectural Design (but also received award for honors in Architectural Engineering).

- Began my own practice (Eberhard & Murphy) designing primarily contemporary churches and private residences.

- Also designed and built (with my own hands) several houses for clients, with partners in a design-build firm.

- Organized and managed from 1953 to 1958 a company which designed and manufactured prefabricated buildings - primarily permanent chapels for small congregations.

- Went to M.I.T. and obtained a Master's in Industrial Management as a Sloan Fellow of the School.

- In 1959 became simultaneously a visiting lecturer in the M . School of Industrial Management (Political and Social History of the United States) and the Director of Research of the Sheraton Hotel Corporation (this was more involved with advanced technology, such as computers, than building problems).

- In 1963 became a consultant to the Assistant Secretary of Commerce for Science and Technology of the U. S. Department of Commerce. (My role was to design a building research program for U. S. to be supported by Commerce Department.)

- 1964-1968 became the Deputy Director and then Director of the Institute for Applied Technology of the U. S. National Bureau of Standards. (An 800 person research organization that included building, computer, electronic device, automobile safety, and information services research.)

- 1968-1973 First Dean (and therefore creator) of the School of Architecture and Environmental Design at the State University of New York at Buffalo.

- 1973 to present First President (and therefore creator) of the AIA Research Corporation - a non-profit research corporation established by the American Institute of Architects to create opportunities for architects to participate in research.

What should be obvious from the above, is that the curriculum in Architecture at the University of Illinois was in no way designed to prepare me for such a career, but also has not been a limitation to my diversity. Therefore, I would take a sceptical view of architectural educational patterns that were designed as though they had a direct correspondence with knowledge and skill requirements for future professionals.

PART I

The central, visible question which I was asked to address was:

If there are 1,500 applications for the 180 openings in the three Schools of Architecture in Ontario, what should be done?

WHAT ARE THE BASIC ISSUES?

Behind their question and the alternative answers to it are some basic issues of Western Society Ontario is an interesting geographical-political area. The quality of design which has changed the appearance and style of Toronto during the past decade and a half, would not have been possible without a "civilized" population to whom good design was important nor without a professional design community adequate to the challenge. But until seven or eight years ago, there was only one architectural school at the University level (The University of Toronto) in the Province, and prior to 1960, the citizens of Toronto travelled south to Buffalo, New York, for their shopping and culture. What has happened to bring about this renaissance in a rather staid "British Colony"?

The principal reason for this change would seem to be the system of laws and attitude of mind which allowed the population of Ontario to adjust to change, in fact, to welcome it. A major constituent of this change has been the large influx of new immigrants, mostly from Europe, during the decade of the 60's. An educated population which was growing rapidly in number and affluence (80% of the GNP of Canada is managed in Toronto) would quite naturally invest a substantial share of its wealth, both public and private, in education (as witness the investments now being made by the oil-rich Arab countries in expanded education at all levels). An educated population which was growing rapidly in numbers and affluence would also invest in new buildings, expanded urban services, and the general game of real estate speculation. An educated population which was growing rapidly in numbers and affluence would, in the second half of the 20th Century, expand its knowledge industries as contrasted to its basic manufacturing industries (white collar jobs more than blue collar jobs).

If all of these actions are clear with respect to a growing population that simultaneously becomes more affluent as well, what can we say about a society that reaches a point of stabilization or even economic decline. We would expect to see adjustments made in terms of previous trends, and we could

expect, under these circumstances, to see a certain amount of over-correction. Therefore, we would expect to see a decline in the importance of higher education and a leveling off of the numbers of persons seeking admission to Universities. We would expect to see a decline in building activity and real estate speculation. We would also expect to see a surplus of persons in the job market, so that the blue collar pattern of lay-offs and unemployment would now be felt by those in white collar jobs, including those of executive and professional status.

WHAT ABOUT THE DESIGN AND CONSTRUCTION OF BUILDINGS?

The preceding were things that we would "normally" expect to happen in society as the result of stabilization and economic decline; however, we have some added forces at work with respect to the design and production of buildings. These include:

1. A shifting market for buildings as the institutions in Western Society change. No one expects to get a commission for a cathedral in the balance of this century, and the amount of church building is steadily declining just when a new awareness of "religion" is striking the young. Hospitals are in over supply and are mal-distributed in major urban centers, at the very time that the practice of medicine and health care is undergoing fundamental changes. School buildings are now in over-supply because of the decline in birth rates, just as the concept of adult education and the use of cable television is bringing about fundamental changes in education. Giant office buildings for corporate headquarters are now in over supply just when the financial and corporate structure of business is shifting to decentralization of management. Suburban housing has sprawled across the landscape just when the energy crisis is causing families to have second thoughts about long automobile trips to work and big utility bills for over-heated, over-cooled, and over-mechanized domestic households.

2. A changing technology of building is moving slowly but inevitably toward more capital intensive building methods as the supply of skilled construction labor dwindles and the cost of building soars. Oil rich nations are not exploring the possibility of increasing their supply of skilled workers in order to get at large, new building programs, but they are searching around the world for capital intensive systems of building that will enable them to undertake building on a massive scale with a limited number of skilled workers. The

craft approach to building is all but dead, and with it will likely go the architectural approach of designing one building, for one client, one time on an ad hoc basis. The design challenge will become the problem of designing building processes that are responsive to the new economics of building, the energy conservation ethic, and environmental impacts that are less disruptive of nature's balance.

3. Surrounding these market changes and technological changes is a shift in the theories, value systems, and skills of the new generation of design professionals. I have called this a shift in "paradigm" after the arguments presented by Thomas S. Kuhn in his book The Structure of Scientific Revolutions (Phoenix Books, Chicago, 1962). In my paper, "A New Paradigm for Architecture", attached to this report as Appendix A, I use the analogy of the shift in paradigm that accompanied the Copernican revolution in the 16th century. Just as the earth was considered to be the center of the Universe prior to Copernicus' theory, so the well-designed building has been central to the shared paradigm of architects. (See an elaboration of this argument in my Appendix.) Central to the new paradigm which is now emerging is man, and all men in a free society. To design a fit environment for man is not the same thing as designing a beautiful object called a building. The building may photograph well; may be structurally sound; and may have sufficient mechanical systems and not be a good place to live, or work, or worship. Even if a building were to meet these tests and yet be placed in the midst of an urban mess, a jewel amongst the grime of urban life, it would not represent a sufficient professional response in terms of the new paradigm. As this new paradigm for architecture emerges, it holds the promise of a new sense of relevancy and community to all men from their built environment.

WHAT DOES THIS SAY ABOUT SOCIETY'S NEED OF ARCHITECTS?

I think it means we can't be sure. We cannot be clear about what it will mean to be an architect ten years from now. Architects as defined by the traditional paradigm will either be playing a much smaller role, or will be members of a broader team of specialists. This suggests the possibility of a decrease in the demand for architects. However, within the new paradigm there is an opportunity for an entire orchestra of new roles for design professionals engaged in architecture. This would suggest the need for many more graduates of architectural schools based on the new paradigm.

Ontario, by a partial accident of history and because it probably represents in a dramatic way the changes already underway in Western Society, has a good mixture of schools of architecture, all moving in quite different directions, and

consequently providing a natural means of hedging your bets. At this stage, the collective graduates of the four schools of architecture already represent a wide spectrum of possible future professional designers. Consequently, I would not suggest any major changes in what you have. In the long run, you will likely be on the right track, whichever way the profession moves. In the short run, there are some minor suggestions for change I discuss in Part II.

I also would not worry about the numbers. Somehow the forces at work seem to be sorting out these questions in the university market place. No school I visited was seriously interested in major expansion. No administrator with whom I met was optimistic about new resources for growth. Society seems, therefore, to be providing its own checks and balances without any special master plan.

PART II

In the commission given to me by the ASPG, I was asked to look at a specific set of issues. These were selected from amongst the 13 Terms of Reference of Architecture Study Planning Group.

Number 13. requested: "Make recommendations on desirable provincial enrolments year by year by level; to consider these enrolment figures from the viewpoint of society's need of architects services relative to the manpower demands of the profession and demands for accessibility at the various levels; to suggest distributions of enrolment among the existing university programmes, at Ryerson and any new programmes to be offered."

My answer is given in some detail in Part I of this Report.

For other issues, in what follows, I have reproduced the statement or question given to me and then given my answer.

Question 4. Examine plans for each university and Ryerson for graduate, undergraduate and continuing education programmes in the major divisions of Architecture.

Answer 4. I examined with faculty and administrators in each university their plans and prospects for undergraduate, graduate, and continuing education programmes. (See Recommendations)

Question 5. Examine and evaluate present space and physical resources available to programmes of Architecture in the Universities and at Ryerson.

Answer 5. I examined space in each school. My evaluation is:

A. Toronto is pathetically cramped in terms of space, but happy and active. It would be foolish to attempt to accomodate any additional students in the present space.

B. Ryerson is not so badly off even though they are in an older building removed from the campus. They are in an active, vital part of town. The elevator situation is, however, inexcusable. It should be shut down or fixed, not left in agony.

C. Waterloo has done good things with made-over space, but their location tends to reinforce their isolation from the rest of the campus. Once again, there would seem to be no more room for more students.

D. Carleton has a new building and the worst space condition. It may be representative of the short-comings of much in contemporary architecture that the sculptural quality of the interior spaces does nothing to enhance the functions of the school. There are hundreds of cubic feet of space unused either because the ceiling is too high or because special space was allocated for functions never begun (big laboratory) or since abandoned. The condition of the studios is as physically cluttered and messy as any I've seen anywhere. It suggests that students are considered to be somewhere between free spirits and spoiled children.

Question 6. Analyze library resources.

Answer 6. I looked at the libraries. I can't get very excited about them. Architecture by and large is not learned from books at the present. If it changes in the directions I discuss later, most of the architecture books around will not be very useful. Carleton's arrangement of keeping the books for the whole university in a central place is probably the best solution. If the faculty used the library as a true intellectual and educational resource, all of the library would be useful, not just "architectural books". Periodicals are a different matter.

Question 7. Describe staffing patterns and characteristics of faculty at Schools and Departments of Architecture.

Answer 7. Staffing patterns and characteristics of faculty at the four institutions are remarkably similar. Each school in the advance material sent to me held promise of being richly diversified in disciplines and inter-disciplinary in make-up. I met only a small segment of the faculties, but if they were representative I would observe the following:

A. Architectural faculty are, by and large, kind, gentle, and concerned human beings. They are teaching because they like working with students, not because they have shown any special pedagogical skills or have been educated to be educators.

B. They are mostly white males who have themselves graduated from a School of Architecture and usually have had some professional experience. A significant number are presently involved in some form of practice.

C. The non-architects tend to be part time; housed in other departments; or non-Canadians by birth (while the vast majority of architects are Canadian).

D. They all seem to work long hours, in terms of student contact, and many of them devote time way beyond the call of duty. There are, in each school, more students per faculty member than seems to be the case in most other programs of the institution, even though the BIU's generated would be more than enough to give them a better shake. Top administrators are not making the tough decisions called for in terms of re-allocating budgets.

E. The significant differences in faculty, between institutions, seems to be in the Head of the School and the consequent shared attitudes about what they are collectively doing in terms of architectural education.

Question 10. Report on the present state of education in Architecture in Ontario by institution and division (specialty) in respect of:

(a) number and kinds of faculty
(b) nature of programmes offered
(c) Enrolment at each university and at Ryerson by division
(d) applications for spaces by division, admission requirements, quality of student body, and such other matters as are considered significant.

Answer 10. The statistics from the four institutions are available in overwhelming detail from their separate reports. I would like to discuss frankly their differences in leadership, style, and philosophy. (Please remember these are personal opinions.)

Toronto: Peter Prangnell has mellowed during the years he has been at U. of T. He is still somewhat pugnacious with respect to the profession and the outside world in general. He has, however, done a brilliant job of weaving a tapestry of integrated courses around a theme which most of his faculty reinforce and to which his students are enthusiastically loyal. The sequence between the years; the actual content of the studios (as contrasted to the announced content); the reinforcement of studios with other course work (excluding certain workshops which seem to be make-work projects for some of the tenured faculty he inherited) are all operating at a level of quality that seems to work better than any other architectural school I have visited in the U. S. or England, as well as Canada. He seems to be the glue that holds it together, so one cannot be sure about what will happen at the end of his reign.

The philosophy of the School seems to be clearly within the new paradigm described in Part I. While one might expect this to lead to student attitudes that were anti-professional,

this was not the case. In fact, 100% of the graduating class indicated that they intended to go on for registration. In a few years, this should make a big difference. The students are bright-eyed and bushy-tailed well beyond the average college student. The new students just entering the school seem even better than the older students (just an extra-high caliber of already exceptional students, not in any way a put-down of older students) and, at the risk of sounding chauvenistic, the females are even brighter and more astute than the males. (I found this to be true at all four institutions.) One would be tempted to suggest that it would be difficult for a faculty to damage a student body of this high quality, so that the pedagogical problem is how to be adequate to the challenges of the students, rather than how to stimulate them.

Ryerson: To begin with, I found this program to be of much higher caliber than the other three institutions seem willing to recognize. I don't have much patience with academic quibbling about four-year versus five-year degree programs so I won't comment on that. I find it hard to imagine that four years is not enough time to acquire architectural skills (if that's the goal) and a lifetime is needed for education, so that four years is a good start.

Fred Fisher seems to be a professional manager. I think he is clear on the strengths and weaknesses of his program, his faculty, and Ryerson. He seems to know what he would like to accomplish and has a plan for getting there. There is a clear emphasis in his program on knowing and understanding the processes of building -- from the design of systems of building to construction management. His faculty seem to understand this as well, and share a common cause in putting together an educational program for this purpose. I found the faculty equal to and as dedicated as any of the other three institutions.

The students I met with from across the school were a pleasant surprise. I had met earlier in the day with a class of first year students who seemed less sure of themselves; more traditional, office oriented and less sophisticated than the Toronto students. However, when I met with a cross-section of students later in the day, I found them to be as bright-eyed and bushy-tailed as any I met at the other three institutions. I can't tell which group was most representative, but I'm willing to bet that in a few years the student bodies in the four institutions will not be dramatically different from each other in terms of intellect, ambition, or performance in human terms. All four institutions seem to be drawing 90% of their students from the same pool of Ontario 13th year graduates.

Waterloo: For a relatively new school, located in rented quarters a half-mile from a new campus, this school seems to be improving rapidly. I say improving, because there was an earlier period of development that apparently was not handled very well and caused some trauma in the School's early history. The unique aspect of this School is the work study program which provides actual experience on the job (primarily in architectural practice). There seems to be mixed opinions on the educational value of the work experience, but clear economic value to the student. (It seems contradictory to value work in a firm so highly and yet to expect the firm to pay the student for the experience, while the University sometimes provides marginal experiences that not only the student but society is expected to pay for.) The placement of over 250 students in working situations is a remarkable achievement, even though the selection of work locations tends to enforce the traditional paradigm of practice. It is this School that comes the closest to providing entry to traditional practice.

Fraser Watt, the Director of the School, is a dedicated man -- perhaps too dedicated. He literally eats, sleeps, and works at the School, commuting to his home in Toronto on weekends. He sees himself so trapped by limited resources and an administration unwilling to listen. My reading of the situation was that the "tight little island" of the School may be its own worst enemy. The new Dean of the faculty and the new Administrative Vice President have an opportunity to bring the School of Architecture into the wider circle of the University. Because the architecture students are the brightest ones in the university (by entrance exam scores), the issue is one of providing them with an opportunity to intellectually challenge students in other disciplines. At the present time they are taking courses outside of the School that are "watered down" in intellectual terms. The set of courses organized around the cultural stream within the School appear to be very high caliber and the most intellectually stimulating ones available to the architecture students.

Carleton: The special flavor of this School is intended to be the opportunity of giving the students a "market place" of educational patterns. The master plan which outlines this set of patterns looks exciting, but I received the clear impression that the actual program was not delivering the full range of opportunities.

Douglas Shadbolt has been the guiding light behind the School's plan of action, its relatively great success in getting financial support, faculty positions, and a new building. However, he seems now to be unsure of how to deal with

the problems at hand. These include a student body that appears to be drifting along without much internal or external discipline (the "free spirit" suggested earlier); a faculty which is dominated by the notion of independent studios organized around the model of the master and his disciples (thus making it only accidental if there is any sequential linkage during the five years a student goes through the process); and a top administration in the University faced with budget cuts and a faculty in the process of unionizing to prevent the cuts from weeding out unneeded members of the faculty.

Carleton has a unique situation in being in Ottawa where it could develop many links with National Government agencies related to building industry programs and policies. Some of this has been done, but not much. Individual faculty members, including Shadbolt himself, have worked as private consultants to Government agencies, but there is no institutional mechanism yet in place to allow these connections to influence the educational patterns of the students or for the School to influence policy within the agencies. I will return to this subject in Question 12.

Question 12. Make recommendations for the further development of present Schools and Departments and the development of new schools of Architecture (if any) for the next decade at the undergraduate, graduate and continuing education levels by major division. In particular, recommend on any new programmes and new locations desired and the phasing-out of present programmes.

Answer 12. As brash as I am, I would be reluctant to make any recommendations for the "next decade" that would be fixed. As I tried to point out in Section I of this report, I believe that Western Society, Universities, and the Architectural profession are all in a stage of major transition. I cannot envision any "steady state" in terms of educational programmes that could adequately reflect the professional world which students now in Schools of Architecture will be facing ten years from now. This suggests a policy of flexibility and openness to change during the next ten years -- a very difficult policy to follow in practice. (The move of Carleton University faculty to unionization is obviously an attempt to freeze the status quo and thus a practical manifestation of resistance to change.) We have many more models for how to resist change than we have for bringing it about; and Universities are, as human institutions, just as likely to resist from below new directions imposed from above.

There are, however, some things that can be done in the short term that would seem to be desirable. I have listed below those ideas that evolved out of my visits that might be considered. The first set of ideas are general ones for consideration by all of the institutions, and the second set are unique to a particular institution.

General Ideas:

A. Work out with the Ontario Architectural Association a program of internship for those students interested in becoming registered that is educational in fact as well as in intent. This internship program should occur during the period of time students are enrolled at the institution, probably just prior to their last year (or last two years). The students should pay "tuition" to the office, rather than be paid, which puts them in a position of buying an educational experience rather than receiving a job. The offices which participated in the program would be required to organize an educational experience that met certain guidelines with respect to what the students did while they were there, how much exposure they got to senior members of the firms, to key decisions being made, to clients and to actual construction projects. By paying "tuition", the students (and their advisors) would be in a position to demand performance on the part of the professional firm, and the firm would have the economic base which would enable them to deliver appropriate experience without requiring that students "earn their way". The combination of tuition payments, about $600 per student per nine-month period, and the "free" services of the students would make the economic issues attractive to the firms. Students at places like Waterloo would lose the income they now enjoy from work-study programs, but they would get much more educationally beneficial experiences, which is why they are involved in Universities in the first place.

The Schools should then remove from the academic program within the Universities such courses as are strictly oriented to professional practice (such as office practice, specifications preparation, contracts and agreements law, etc.) and leave that to the offices. The academic program for a first professional degree would then be four years in a University and one year in an office after the 13th grade. That should be more than enough time to accomplish the intended goals of professional education. Graduate studies would then take on a different purpose. (See below)

B. Because not all students who enroll in architectural study programs are interested in becoming registered professionals, the year of work experience should offer a broader

potential than that described in "A". Some of the variations that suggest themselves are as follows:

1. A year of special study in the University in another field such as sociology, management, economics, or law that provides the student with intensive exposure to another discipline. By doing this in the fourth year, the last year of architectural study (the fifth year) becomes a serious study of linking architectural concerns to another discipline rather than the shallow exposure now offered. Students who elect this pattern of education will also bring new insights and understanding to their fellow students in the last year's problem solving sessions.

2. Those students who by the end of their third year are interested in the possibility of public administration or policy studies in architecture could spend their year as interns in a governmental agency. Once again, however, the year should be organized as an educational experience rather than on-the-job training. Students from Waterloo indicated that their poorest experiences had been in governmental agencies where they were treated as political "hacks" (no real content to their jobs).

3. Work experience in another country, not unlike the "Peace Corps" in the U. S., for those students who would benefit both the developing country and themselves might be another way to spend the year.

C. Universities in general, and architectural schools in particular, should be thinking more seriously about "adult" education. Much lip service is paid to the notion of an educated person being involved all of one's life in various educational experiences, but not much has been done about it. In an educated and civilized society like Ontario, the interest and opportunity should be enormous. If the Universities were not primarily oriented to 18-24 year old persons, their costs to society would be viewed differently. Those University Administrators who over the past ten to twenty years have appealed to the middle-class for support on the grounds that they were giving their children crucial preparation for high-paying jobs, are now finding their arguments undermined. There is almost an inverse relationship between the amount of formal University training and available jobs. An emphasis on the University as a place to acquire knowledge and understanding, to mature as a citizen and as a person, to probe new areas of intellectual curiosity is not necessarily in conflict with being trained to a specific job market, but it generally has turned out that way. Architects are a good

example. While Universities were hard at work giving them the information and skills they supposedly needed to be practitioners, their education was by and large neglected. (In my own undergraduate education in architecture, for example, I was never exposed to any area of intellectual development beyond the narrow confines of architecture.) Adult education for architects in Universities should, therefore, be much broader than so-called "continuing education" programs imply. While subjects like ecology, building economics, energy conservation, and technological change are all of direct benefit to practicing architects; and while all of these subjects could be organized within a University setting, it should also be possible to participate in seminars of a serious nature from the humanities, social sciences, law, etc., as a part of one's ongoing education. A broad program of study such as this would not be unique to architects, but to the adult population of Ontario generally. I can imagine such a program offering a reverse sabattical to busy people in all walks of life. An opportunity to enter a University setting for six months to a year for what John Gardner called "self-renewal" would be still another advantage. A major program of this sort would change completely the formula practice of funding Universities by BIU's tied to specialized areas of study for young people.

D. At the other end of the spectrum, so to speak, it would seem that much more needs to be done at the elementary and secondary level to expose children (and their parents) to what a University is for, in general, and what Schools of Architecture are about, in particular. All of the architecture students with whom I visited indicated that they, and their fellow students, had very vague and limited ideas of what architectural education and practice were all about. They were amazed, and mostly pleased, to find out how rich the field was, once they had been accepted into a program of study. They indicated that guidance counselors in high school had been of little or no value in understanding what architectural study meant (e.g., girls were discouraged from applying, and strong math and science were emphasized) and were particularly ignorant with respect to the differences in emphasis in the four schools. Since Ontario is such a closed society (90% of the University students come from high schools within the Province) it should not be difficult to do a much better job of counseling at the high school level.

E. In line with the previous comments, I would recommend that the current differences in the four schools be sharpened rather than blurred. There is now a rich diversity of choice for students in Ontario in the Schools of Architecture -- if they only knew about the choice at the time they applied or if movement between the four schools was facilitated. (This movement between schools might especially be encouraged after

the year of experience or special study mentioned in "A" and "B" above.) At the risk of great over-simplifying, I would characterize the four schools as follows:

Waterloo - Emphasis on preparation for traditional architectural practice.

Carleton - Emphasis on diversity of careers with special preparation for public service careers.

Ryerson - Emphasis on professional management and design skills for building processes and construction management.

Toronto - Emphasis on man-centered paradigm of professional responsibility, research, and graduate study leading to scholarship and/or teaching.

Specific Ideas for Each School:

To reinforce the ideas suggested above and to build on the present institutional strengths and school orientation, I would suggest the following:

Toronto: The present graduate program at Toronto be scrapped (it is almost extinct anyway) and a new one be put in place which provides for advanced study (not advanced practice), scholarship, and research. This will require major reprogramming of resources within the School and within the University. Toronto should be the only graduate program in Architecture in Ontario. It should not be a professional degree program, but beyond the professional degree for those seriously interested in intellectual development (this includes "adults" who wish to return to a University setting for a serious semester or year of self-renewal). This means that the professional degree at Toronto (and the other three institutions) would be available at the end of four years of undergraduate study interspersed with one year of intensive exposure to practice, experience, or special study (A. and B. above). This graduate program should operate across the four divisions of graduate studies (social, physical, and life sciences and humanities) and draw on each of their faculties to strengthen graduate programs of study in areas which cross disciplines but focus on the man-made environment.

Ryerson: Ryerson should be given equal status with the other three schools so far as the OAA is concerned. My proposal suggests that their undergraduate program leading to a B Arch

degree be strengthened rather than going on to a graduate professional degree. I suggest this for three reasons:

1. I don't believe that more than four years are needed to become proficient in the field academically, especially if the one year of intensive experience outside of architectural school is accepted.

2. Ryerson as an Institution will not be easily transformed into a place for graduate studies, especially with budget constraints and the academic strengths of U. of T. in opposition.

3. The undergraduate program is just getting to the point where it has strengths which could easily be weakened by spreading the faculty time and talent too thin.

Ryerson should also continue to provide the service to the community it is able to do through its evening program.

Waterloo: Waterloo should reduce its work study program to one year of intensive exposure and concentrate on making that one year more of an educational experience than an on-the-job training exercise and financial back-up for students. The School at Waterloo also needs to be more fully integrated into the life of the University and may need to move its physical setting to make it happen. The fourth and fifth years are now weak academically and understaffed. If the resources and staff were concentrated in one final fourth year, a lot could happen to strengthen the fourth year. A strong new director will be needed for the School since Fraser Watt is stepping down at the end of this term. (As a gratuitous management suggestion, as old as Machiaveli, it is not a good idea to leave former Deans, Directors, or Chairmen on the same faculty as newly appointed successors. At Waterloo this principle has been violated to no one's advantage -- including the previous Director Bjornstad.)

Carleton: Carleton should modify its five-year program to provide for one year outside of the School. The dominance of the studio life, the subsequent retreat from outside influence, and the power of the studio faculty would all be dealt with by this move. I would question the need for a separate degree program in environmental studies if this were done. If the present program of undergraduate studies was organized closer to the original model of diversified patterns within the broad framework of Architecture, and if the faculty were better balanced in fact, as well as on paper, there could be a rich program within the existing framework.

A graduate research program which formed a close link between the University and Government agencies would seem to be in order. Dean Pacquet has some interesting plans to move in this direction already underway. Doug Shadbolt has explored a lot of possibilities. My suggestion is that a graduate research center that combined architecture, public administration, and law or economics would be preferred to one that was limited to the Architectural School alone. I also would have serious reservations about a research center that was organized primarily to market faculty consulting time, and only incidentally related to graduate education. I see the School of Architecture as providing graduate research assistants who get their degree in a field other than architecture, even though they maintain academic ties to the School.

APPENDIX A

A NEW PARADIGM FOR ARCHITECTURE

John P. Eberhard

June, 1969

A NEW PARADIGM FOR ARCHITECTURE

John P. Eberhard
June, 1969

> Close historical investigation of a given specialty at a given time disclosed a set of recurrent and quasi standard illustrations of various theories in their conceptual, observational, and instrumental implications. These are the community's paradigms, revealed in its textbooks, lectures, and laboratory exercises.
>
> -- Thomas S. Kuhn*[1]

To be able to speak about a new paradigm for architecture means that first we should understand the current paradigm. I would not wish to pretend that all architects or architectural educators would agree with the definition of the current paradigm I am about to present, but it should be sufficient to indicate the nature of the shift.

Kuhn suggests that scientific paradigms are shared by a community of scientists often in a non-conscious way, that: "paradigms could determine normal science without the intervention of discoverable rules." In fact he suggests that it is only after the paradigm has gained general acceptance in its application to some definitive range of natural phenomena that it begins to find its way into textbooks from which the future practitioner will learn his trade. Paradigms cannot be learned in the abstract, but by observing and participating in the application of these concepts to problem solution. Paradigms then are not meant to be some abstract set of utopian standards (like the ten commandments) or even some kind of ethical goal, but the concepts and rules upon which a body of practitioners is acting and which it attempts by various means to inculcate in its followers.

One other introductory remark. Kuhn suggests that when paradigms begin to seem insecure and are questioned by a new generation of professionals, that rules become rigidified and energetic attempts are made by those who hold the old paradigm to preserve their utility by institutionalizing and codifying their rules. Max Planck, surveying his own career in his Scientific Autobiography, sadly remarked that "a new scientific truth does not triumph by convincing its opponents and making them see the light, but rather because its opponents eventually die, and a new generation grows up that is familiar with it."*2

*1 The Structure of Scientific Revolutions, Phoenix Books (Chicago, 1962) p. 43.

*2 Max Planck, Scientific Autobiography and Other Papers, trans. F. Graynor (New York, 1949) pp. 33, 34.

It is not likely, therefore, that those who hold an older paradigm are going to recognize or accept the new. The universities play a crucial role in forging new paradigms.

I would suggest the following precepts as forming the paradigm of current "normal" architectural practice:

- The architect is the chief form-giver to the buildings which we build. Other skills are needed to supplement and extend his own creative acts, but he is the leader of the team.

- Architectural forms are rooted in our rich building history, but contemporary design is no longer dictated by rules of style or required to use a vocabulary of details and ornamentation from any particular school of thought. Designers are free to create new forms.

- The act of creation by an architect is an individual act, nurtured by experience and knowledge and sharpened by the give and take of the criticism of his peers, but in the end stamped by his individual style and philosophy.

- The quality and character of the building which results from this effort can be appreciated by laymen, but is best evaluated by those who are trained in the art. Therefore, architectural design is best judged by other architects and taught to the novice by those who have demonstrated proficiency in the art. The criterion of excellence is: "Does the design meet the standards important to me and my fellow professionals?"

- The instrument of communication between the architect and the process of building consists of working drawings and specifications. The novice must, therefore, acquire the skills of drawing and specification writing. Proficiency in representing his ideas in drawings and models is the mark of the professional designer and they remain his property to be used only by those who pay him a fee for their use.

- Because the architect is the master designer of buildings, his knowledge should include an understanding of structural design, mechanical and electrical design, acoustical and lighting design, the properties of materials, the techniques of construction, etc.

- Because the architect is responsible professionally for the results of his service, only those who have demonstrated their knowledge of the art, the materials and the laws of building should be licensed to practice.

- Because buildings have an impact on public health and safety, all buildings should be designed by licensed professionals. (In most states, exceptions are now made for smaller buildings, like homes, that are not directly involved in public use.)

- Because the architect bears this public responsibility and because he is an agent for the building client, he should limit his services to the design and supervision of building construction, and not involve himself in the manufacturing of building components or the contractual services of actually erecting buildings. (This is now changing in the United States, but still hotly debated.)

Other precepts, such as "form follows function" or that "buildings should express the machine precision of currently available technology", or that design should reflect a "diversity within unity" are individual credos. They are held steadfastly by particular groups of practitioners and form the underlying rationale of their particular attitude, but they are not shared paradigms. They require for their vitality a leader and his disciples who extend and perpetuate the individual precept.

THE NEW PARADIGM

The new paradigm begins by shifting its focal point from well-designed buildings to man-oriented environments. Just as in the Copernican revolution (when the focal point for our universe was shifted from earth to the sun) the set of objects and their relationships may still be the same, but they are now seen from an entirely different viewpoint. The new paradigm does not require a modest shift in our view of the world, or even an evolutionary advance over our previous position, but a radical or revolutionary departure from the old paradigm. If we understand architecture to be not the collective activity of men who call themselves architects; if we know it is not the accumulated set of buildings represented by photographs in the architectural books, but that architecture is that body of knowledge and assemblage of techniques which binds together the art, the science and the technology of building in the service of man, then we have made a beginning.

Universities in our post-industrial society (to quote Daniel Bell) become the adaptive system between the new paradigm and a body of theoretical knowledge. This will only be possible if Schools of Architecture address the many-faceted aspects of the design processes which are central to the new paradigm, not exclusively to the education of product designers. It will also require that the Schools include direct involvement in many other relevant disciplines and, in turn, the involvement by students of other disciplines in studies within the Schools.

The new paradigm places man, his needs as a user of buildings and cities, and his needs as a human being who relates psychologically, physiologically, and sociologically to the built environment, as the primary determinant of well-designed buildings and places. Those professionals who are educated within the new paradigm will be seen as instruments of society intended to interpret and resolve the interaction between society's needs and resources with respect to the entire man-made environment. This is, after all, one of the principal attributes which separates man from other living creatures - he adapts his environment to his needs. This does not eliminate art from the craft of building, but places it in a responsible context. It suggests that the measure of effectiveness of design results will be the adequacy of the environment provided for human well-being, growth, and fulfillment. It suggests that to the extent that the ego of the designer interposes itself arbitrarily or capriciously between man's needs and the resolution of those needs, to that extent the design is to be considered non-responsive. Bad design then, is the result of poor "fit" between design requirements and design solutions. The practice of designing only one building in the midst of an urban mess is bad design no matter how splendid the individual building. An individual may not feel responsible himself for the urban mess, but the design system of which he is a part must accept the responsibility for non-performance. The failure of the larger system of design to perform effectively is an indictment of each of its members and their mode of operation. In the old paradigm, the architect might place the blame on the lack of intelligent and sufficient clients for his services; in the new paradigm, the design professional accepts the responsibility for the design quality of the total man-made environment. Society will therefore have the right to expect them to find the ways and means to meet this responsibility effectively.

The primary shift of emphasis will be, then, that those engaged in architecture as professionals will be part of a design system which promises a new sense of relevancy and

community to all men from their built environment. It promises that all of us can occupy, use, and admire the products which have resulted from such a system - products that range in size and complexity from rooms to urban places. It is not the designers alone who are to be satisfied with the results, nor even their immediate clients, but the whole of society.

It is no use to pretend that this is either now possible or easy to accomplish in the future. There are huge gaps in our knowledge of how to measure human well-being, growth, and fulfillment; of how to bring about organizational and technological change; and how to distribute our wealth in order to give equal access to all potential users. But the core of the new paradigm has this "man in his social context" theme and will, as a result, begin to press on existing institutions for response and support.

I would expect there to continue to be a need for individual genius and creativity, in fact, no one could pretend to exclude them from a system of design, but the harnessing of genius and creativity to design systems will be enhanced by more pervasive results. Architecture, then, is to become a method of infusing those intellectual ways of knowing and those technological ways of doing with an emotional content, responsive to man's needs and aspirations, whenever the product of those ways of knowing and doing is to be the hollow places of our man-made environment which surround the activities of our lives.

APPENDIX D

Report to the
Architecture Study Planning Group

Council of Ontario Universities

Prepared by

Bernard P. Spring

March, 1975

INTRODUCTION

This report is a result of the site visit by the consultant to the four collegiate programmes in architecture in Ontario (Carleton, University of Toronto, Ryerson and Waterloo) between March 7 and 14, 1975. In addition, the documentation prepared by the Schools was reviewed in detail. The questions and conditions examined were limited to items 3, 4, 5, 6, 7, 10, 12 and 13 of the terms of reference of the Architecture Study Planning Group of the Council of Ontario Universities.

It was a privilege for the consultant to have an opportunity to review the state of architectural education in Ontario, its relationship to the profession and the needs of the public at a moment of decisive change. The primary reason for this period of change and re-evaluation would seem to be the transition in Ontario from a relatively small, homogeneous society to a large, growing, heterogeneous culture. The architectural profession, professional work itself and the schools reflect the strains attendant to such a transition.

The four programmes which were reviewed each had significant areas of strength that deserve to be nurtured and supported. Had this evaluation been in the mode of accreditation, none of the programmes would have failed to achieve recognition for their efforts. However, in the judgement of the consultant, only provisional accreditation would be appropriate for any of the programmes. Each school (as well as the hoped-for provincial system of architectural education) has serious problems which will take great conviction, determination as well as internal and public support to rectify.

METHODOLOGY

The consultant has been a participant in and observer of scores of architectural programmes in the US over a period of twenty-five years and two programmes in Scandinavia for a period of two years. As a result, he is keenly aware of the difficulties and misunderstandings that may come about after only twelve hours of direct contact with a school or one week of exposure to the context of a different nation and society. Consequently, a concerted effort was made to

leverage the value of this limited exposure by using a method of analogies.

Most of the questioning and observation was directed toward finding out the ways in which architectural practice and education in Ontario were different from the conditions with which I have greater familiarity. And, in those instances where no differences were claimed or detected, the effort then turned to finding out the extent to which the situations in Ontario might be similar to those which had been personally experienced over a considerable length of time. This was done to test and verify the extent to which responsible judgments might be made.

In most, but not all instances, the structure, the issues and problems of architectural education appear to be quite similar to those in the U.S. at this time. Thus, it is hoped that the advantages of the consultant as an "outsider" outweigh the disadvantages of the necessarily superficial involvement in the complex, day to day workings of the system which is being assessed.

A conscious attempt has been made to be moderate in the suggestions and recommendations contained in this report. It is recognized that a set of serious economic, social, political and administrative constraints will be placed on any suggestions for change. The temptation to urge an ideal concept of what architectural education should be has been set aside. On the other hand, no significant progress can be made to resolve the problems being faced by the Schools and the profession without some willingness on the part of the professional society, teachers, administrators and students to trade off some apparent advantages they now enjoy for the sake of improving the quality and direction of architecture and its role in society.

It is hoped that the recommendations are made with a realistic expectation of the kinds of changes the people involved will be willing to support once they understand what is to be gained.

Finally, it was necessary to have a clear working definition of the task and role of the profession as a basis for making judgments about the questions raised in the terms of reference. It will illuminate the comments that follow if this

definition is stated explicitly at the outset.

This definition, which is, as it should be, broad, nevertheless sets clear boundaries for the task and role which should be the immediate concern of the Schools and the organized profession. Needless to say, many individual architects may make significant contributions beyond these bounds. But this will be because of personal motivation and ability rather than because of the specific goals of architectural education and registration. The definition has two components:

1. An architect should be able to assist public bodies, elected officials, administrative agencies, private clients and user groups in the generation, evaluation and choice of policy alternatives concerning changes in the man-made, physical environment.

2. The architect should be able to make decisions about the most effective strategies and use of resources to carry out policy decisions about physical change in the sectors of the environment intended for human use and occupancy.

A useful illustration of the boundaries that this definition implies would be the design of a paper mill or an oil refinery. An architect would not have a direct professional involvement in the workings of the industrial process itself (which would be carried out by engineers). Nor would the architect design the systems which would protect the quality of the air or water resources. The architect would work directly on all those aspects of public health, safety and welfare generated by the use of the installation by people who work there, visit or live in its area of influence. Please note that I am not suggesting that the architect should not be aware of and sensitive to questions such as air or water quality. But I am suggesting the importance of making a distinction in education, practice and licensing between those things an architect is responsible for knowing <u>how to do</u> and those things it would be valuable for him/her to be <u>aware</u> of.

This definition may be helpful in sorting out the central thread of architectural education which distinguishes it from the education of those in related disciplines concerned with environmental change and environmental quality.

GENERAL PROBLEMS

Without exception, everyone I spoke with about the future of architectural education in Ontario either expressed or evidenced a strong sense of uncertainty and anxiety about the future. This was a resounding confirmation of the wisdom of the decision to conduct a thorough study at this time.

The basic problems which seem to underlie the need for evaluation and change might be identified as follows:

1. The lack of agreement and clarity about the basic mission and intent of each of the programmes. None of the Schools was able to present an explanation of a central theme (around which the vast scope of its interests, and its specific areas of knowledge and ability might be organized) which would be equally understandable and convincing to the Schools' many constituencies (i.e. the public, the government, the profession, prospective students, enrolled students, teachers and academic administrators). The sources of this problem are imbedded in the additional problems listed below.

2. The lack of agreement about the relationships of collegiate professional education to the interests and objectives of the professional community and to the registration procedure. Quite typically, and indeed appropriately, all three University Schools and Ryerson felt it was their obligation to educate students for some, as yet undefined future role of the architect rather than for the functions now being carried out by the (putative) "typical member" of the professional society. As best as could be determined, there also seemed to be evidence of differences of opinion about the proper role of the architect within the professional association. This problem is further compounded by the tradition which charges the private professional association, OAA, with the public function of licensure of professionals. My impression is that constructive discussion and negotiation on these issues has been difficult because there is a tendency on the part of the OAA and the Schools to stereotype the attitudes and positions assumed to be held by both groups. (The majority of the teachers are, of course, members of both groups.)

3. The lack of realism in defining the administrative location and relationship of essentially clinical and role-model based architectural programmes within three universities which hold central the academic, scholarly model of education and within a Polytechnic Institute which has a vocational, craft oriented tradition. There is no reasonable analogy between architectural education and any other well known form of higher education. Legal and medical education are also unique, but not similar.

Education for these larger, better known professions is usually accepted as being in a class by itself and relatively independent in its relationship with a university. Architecture requires no less independence to flourish. But, these are obvious drawbacks. Unlike legal and medical education, architecture is basically an undergraduate enterprise in Ontario. It must integrate the general education which students of law or medicine receive in their undergraduate work. Further, architectural schools are currently too small to function well as self-contained, independent faculties. And, perhaps most important, architecture does not yet have the basis in research, scholarship, fundamental and widely accepted knowledge and theory which are the mainstays of legal or medical education.

Architectural programmes must draw in an eclectic way on the work of the humanities, social sciences, applied science as well as on their own history and traditions. No wonder architectural programmes seem always to be a strange and indigestable administrative unit in their sponsoring institutions. However inconvenient, the colleges must learn to accept and support their architectural programmes for their unique social, political and educational qualities rather than trying to make them fit within better understood patterns. Similarly, the teachers, administrators and students of the architectural programmes must never pretend they work in the scholarly, academic model when they cannot, in fact, do so at this time in the development of the profession.

One example of the kind of mismatch being characterized is the adoption of college-wide personnel policies for teachers in architecture. The differences in educational needs and practices require different standards for workload, promotion and tenure than those which apply to other disciplines.

4. The persistence of traditional patterns of internal programme organization and management in spite of the announced innovative intentions of each of the four schools. In the three university programmes, there is an outrageous overexpenditure of resources (teachers' time, students' time, space) on the inherited pattern of behaviours known as the "studio" (a place where works of art are created). At Ryerson, there is a sharply reduced commitment to studio time but the familiar expectations and behaviour survive.

This observation should not be misunderstood. This consultant is convinced that the integrative, synthesizing, whole-problem oriented workshop is one of the greatest strengths, even the greatest glory of architectural education. However, he is convinced as well by his own experiences over many years that the objectives and spirit of the studio may be fulfilled with a much more moderate investment of resources. And, once released from the studio, those resources of time, space and effort can be redistributed to the enormous benefit of the programme as a whole.

In a later section of this report, where individual school programmes are evaluated, a distinction will be made between the way the studio experience may be used to benefit undergraduate students (first four years of college) and graduate students.

All of the programmes were found to be lacking in proper support for the studio in three ways. First, the curricula are excessively insular. For an education which claims to be preparing professionals for an as yet undefined realignment of social priorities and career patterns, there is a shockingly small proportion of a student's work called for in general education in a variety of other disciplines. How can the studio be integrative if the student is exposed overwhelmingly to the thinking of the architects?

Secondly, non-studio course work is all too typically atomistic and uncoordinated. The pattern of professional courses other than studio seems more a result of the individual (and usually unrelated) special interests and abilities of the teaching staff. Only the most unusually gifted students can find a way independently to put all the disparate pieces of history, theory and technology together. And that is why the work done in the studio usually falls far short of the potential envisioned in formal course descriptions.

Finally, the three university schools (but not Ryerson) simply do not provide enough organized class work in theory and technology to create a suitable base for mature use of studio time. At Ryerson, the course work is provided, but forms a basis for much less complicated studio work than is being attempted.

I call attention to the fact that I will not urge more interdisciplinary work in architectural programmes. Hardly anyone in the schools fails to share this popular desire. In a few isolated, happy instances, an interdisciplinary effort has been sustained. In each case, it appears to be the result of a lucky accident of personality. No institution of higher learning anywhere has found effective incentives to regularize cross-discipline cooperation except when massive research or development grants are available. This particular incentive is not likely to be available to architecture in the foreseeable future.

5. The lack of agreement on a basis for coordinating and pooling the individual strengths of the four architectural programmes in the Province. It was heartening to see that all of the schools are sensitive to this problem and are in the process of dealing with it through the Architecture Study Planning Group. It is essential to develop a precise but spacious conceptual framework within which each school may establish an explicit central theme and set of priorities. For it is realized by all that no single school, particularly one of manageable size (say, under 500 students) can or should attempt to cover all aspects of professional education with the same emphasis.

There was an inclination in the documentation prepared by the schools to depict a fairly complete, self-contained universe of education within each programme. Perhaps the format of the reports might have forced this kind of response. The site visits revealed a markedly different impression. Each school does have a tendency toward a different scope and purpose. When these distinctions are identified and strengthened, a true coordinated educational network can become a reality.

The consultant's suggestions for definition of the special role of each school will be outlined in the recommendations that follow. The conceptual frame for such role definition will be briefly characterized here. There are two dimensions: the setting of priorities and the development of a theme. They are, of course,

closely related.

My approach to setting priorities is described in detail in the Princeton Report, published by the American Institute of Architects in 1967. I will paraphrase briefly here. All architectural programmes subscribe to three basic goals: a) learning to work most effectively within present day constraints, b) developing a working knowledge of new realms of learning and c) developing concepts of potential future environments. As no school can persue all three objectives with equal vigour and interest, the profile of any school may be defined by the degree of emphasis placed on each objective by the teachers and the curriculum.

My approach to setting a central theme is to identify an aspect of professional activity which can act as a thread on which the many and diverse nuggets of awareness, knowledge and ability provided by a school may be strung. In the case of my own school, this thread is the formulation, implementation and evaluation of the capital budget of the City of New York. However narrow and specialized this may seem at first, we find there is no concern of our teachers or students which does not relate to the theme. In this way we are able to support both a breadth of interest and a depth of understanding of a central function of our community. A wide variety of themes, many quite different than the example cited above, are ripe for picking in Ontario.

It should be made clear that the choice of a set of priorities and a theme does not lead to the education of specialists. I believe specialization is most inappropriate as an objective for a first professional degree programme. However, the diversification of the role of the architect which is in progress carries with it the implication that the rather comfortable, old concept of generalist no longer has real meaning. The new generalist has a broad range of knowledge and ability in one of the many directions of professional performance. Only the occasional genius can deal with every known facet of professional responsibility. And, as we know such manifestations of genius develop quite independently from any educational programme.

6. A crisis of conflicting motivations and values has been created by the sharp increase in the numbers of students applying to programmes in architecture.
The increasing demand for places in architectural programmes is a mixed blessing. The narrow self-interest of the schools, the teachers, the administration and, in fact, the students would seem to be best served by maintaining the present limitations on the number of new students admitted. However, quite fortunately, few of those affected are prepared to act on the sole basis of personal advantage. There is a healthy recognition of the obligations of the schools to the coming generations of students and to the future extent and influence of professional activity.

Whatever the delights of teaching only "the cream of the crop" of applicants, there is an awareness of a social responsibility to provide an opportunity for young people who are strongly motivated to make their career contribution in architecture. It is difficult to believe that only the ten percent of the applicants now admitted will be capable of making a significant contribution if given an educational opportunity.

The other side of the coin of social responsibility is the question of the employability of a larger number of graduates in architecture. On this question, I have a strong sense of conviction. I would support the assertions of the consultants who made an assessment of the graduate programmes in planning and environmental studies. I believe their contention that the variety of career opportunities related to environmental development is increasing. There is evidence that the diversification of career opportunities is in progress in architecture. The OAA questionnaire results reported in their memorandum of September, 1971, shows that only slightly more than half of the 803 responding members were employed in what might be termed traditional practice (classification FA, Private practice-general architectural, 447 respondents).

This analysis of job diversification does not in itself provide a convincing argument for a future increase in employment opportunities. The sharp increase in applications to architectural schools is a more reassuring indicator of things to come. In five to ten years, the growing concern with environmental quality which is now evident among high school seniors will become a potent political force.

Public and government priorities will shift. Much more analytical, design and evaluative effort will be called for per dollar of construction expenditure. Not only is construction volume in Ontario likely to continue an upward trend, but the proportion spent for design services will increase. Thus, there should be no long-term employment problem for greater numbers of architectural graduates. Less likely in the foreseeable future are public policies which will dampen the traditionally steep cycles in construction activity. Prospective students should be made aware of this unfortunate feature of their preferred profession.

GENERAL RECOMMENDATIONS

The following recommendations apply to all schools of architecture in Ontario or to individual schools as they might become part of a coordinated system of education for the profession in the province.

1. After extended and intensive discussion by the members of the ASPG, the School Development Plans should be rewritten using a shared frame of reference. The emphasis of the revised plans should be on the special priorities and theme of each school. Some specific suggestions will be outlined in a subsequent recommendatio

2. The review and appraisal of professional programmes should be organized on a regular basis, similar to the National Architectural Accrediting Board in the

This function should be independent of the OAA. It should be supervised by a Board with membership from the schools, the profession, allied professions, academic generalists, the public and the students. Specific criteria of evaluation as well as procedures and due process must be spelled out.

3. The registration procedure should be based with exceptions upon attendance at a school accredited as suggested above, an approved apprenticeship and a comprehensive licensing examination. This procedure should be directed by an independent Board with representation from OAA and other concerned interests. Its organization should not be a function of the private professional organization but of the Ministry of Higher Education or the Council of Ontario Universities. If a proper examination covering only the legal obligations of a registered architect can be devised, provision may be made for registration of experienced persons who

have not attended an accredited professional school. The legal right to practise architecture as defined by legislation should not be closely tied to the collegiate programmes. Such programmes have a greater obligation to the interests of higher education and the development of future models of professional activity than to the current role and status of the profession.

4. All four schools should be allowed to grow to a population of 400 to 500 student majors and should be made independent administrative units of their institutions with a Dean reporting directly to the chief academic officer of the institution. Although most institutions tend to resist the proliferation of such independent units, the special nature and unusual structure of architectural education must have the immediate attention of the senior academic administrator if quality programmes are to be maintained.

5. Most teachers in schools of architecture should have special status as "clinical" faculty. Workloads must be reduced so that each teacher can be encouraged to develop an active consulting practice. The data provided by the schools indicates the following average weekly workload for teachers: (scheduled weekly hours of course work divided by FTE teaching staff); Ryerson, 20 hours; Carleton, 18 hours; Waterloo, 40 hours (sic!); Toronto, 26 hours. This is probably indicative of some accounting errors, some self-deception and much absurdity. A normal teaching obligation at my own school is 16 hours per week for design workshops (two each for full-time teachers), 12 hours per week for lectures or 14 hours per week for a combination of one design workshop and lectures. Promotion and tenure are based on the quality of outside consulting work as well as teaching effectiveness and service to the school.

A large number of the most active teachers in the Ontario schools are relatively young. To avoid stagnation due to isolation from practice, aging and tenure, a system of rotating one or two-year leaves for teachers should be instituted so that they may periodically play a major role in a significant professional project.

6. The percentage of distributive or elective general education courses required as part of an undergraduate first professional degree programme should be increased

to at least one-third of the total courses or units required. (At my own school, the requirement in the first four years of a five-year programme is 50 percent of the total credit hours.)

7. Scheduled contact hours with teachers in studio should be greatly reduced. The desk to desk, personal chat approach to teaching can be replaced by equally humane but more tightly organized and carefully prepared learning experiences. The personal tutorial is a glorious way to learn about architecture. I would favour its continuation if it did not steal so much necessary energy from other essential components of a programme. It takes much time and hard work for teachers to learn new ways to conduct a studio, as is evident at Ryerson where the above suggestion is being followed. It is worth the effort.

This recommendation applies specifically to the studio experience of undergraduate students who will benefit from a more structured teaching programme. A graduate programme which enrolls more mature and highly accomplished students may well be better if the traditional personal tutorial mode were maintained. Graduate education is appropriately funded for a lower student-faculty ratio.

8. Curriculum patterns and faculty committees should be structured so that all areas of professional course work and the studio work may be clearly related and coordinated for undergraduates. Graduate programmes can tolerate a more individualized, atomistic curriculum. In almost every case, with the probable exception of Carleton, the overall pattern and design of curricula seemed faculty-interest oriented rather than student-interest oriented. An accretion of individual courses designed as self-contained units by individual teachers does not normally make for a properly balanced curriculum.

9. The consultant's personal perception of the choice of priorities which would build on existing interests and strengths was as follows:

Ryerson should continue to give priority to working within present day constraints for the improvement of the level of performance of current professional practice. One useful theme would be the improvement of building codes, standards, zoning by-laws, contract document standards and financing practices.

Carleton should continue to give priority to the development of a working knowledge for architecture of new realms of social science knowledge. Political science and economics should be given equal attention as the behavioural sciences (sociology, psychology). One useful theme, considering the location of the school, might be federal government programmes involving architecture.

Waterloo should continue to give priority to the development of a working knowledge for architecture of new realms of "environmental science" an ill-defined term which I take to mean the environmental work of biologists, physicists, geographers, chemists, botanists, geologists and the like. One useful theme might be the development of the environmental impact analysis as a meaningful instrument of public policy.

The University of Toronto should continue to give priority to the creation of alternative concepts for better future environments. This should be carried out at the graduate level, supported by an undergraduate programme related most strongly to the humanities. One useful theme might be the development of theory and criticism for the public as well as for "insiders".

10. Finally, the question of enrolments. A moderate increase is proposed for the next five years. Figure A, (page 14) summarizes the details of this recommendation.

RECOMMENDATIONS FOR PROGRAMMES

1. Ryerson Polytechnic Institute

a) There is no fundamental reason why graduates of the new four-year programme should be disqualified from entry to an improved registration examination. The current five-year education requirement should be replaced with a performance criterion. The requirement for grade 13 of high school plus the equivalent of 164 U.S. standard credit hours would certainly qualify this programme for accreditation by the NAAB in the U.S.

b) The three distinct streams should be transformed into a unitary programme with

FIGURE A

PROPOSED FIVE-YEAR ENROLMENT PROJECTIONS

SCHOOLS	RYERSON	CARLETON	WATERLOO*	U. OF T.		TOTAL
	(4 yr. BSc in Arch.)	(4 yr. BED, 1 yr. BArch)	(4 yr. BED, 1 yr. BArch)	(4 yr. BA) Under-graduate	(2 yr. MArch) Grad-uate	
1. Present Enrolment	469	288	252	262	14	1385
2. Present admissions	165	70	66	69	8±	378
3. Proposed enrolment	500	420	400*	320	80	1720
4. Proposed Admissions	165	105	100	80	50	500
5. New spaces	0	35	34	11	42	122
6. New FTE faculty	+2	+3	(4)°+3	-2	+4	+12
7. Estimated graduate/year at steady state	100	63	60	48	30	±300

* Assumes new quarters and/or moving the programme to another university.

° to make up current deficit.

BPS:tk
4/8/75

three areas of concentration made available. An appropriate degree title, if the programme performs according to its specifications would be Bachelor of Science in Architecture.

c) The scope and structure of studio problems must be carefully monitored and revised to better match the actual knowledge and ability imparted by the programme.

d) Faculty credentials were missing from my package of documents. This programme requires the most skilled educators and experienced practitioners to make the bold and difficult experiment work. There is no basis for the Ryerson programme to be funded at a lower rate than the university programmes. Ryerson should receive additional support for faculty development.

2. Carleton University

a) The proposed plan for a separate but related Environmental Design degree programme is not likely to be successful for economic, social and political reasons. Professor Shadbolt has been given a detailed explanation of this judgement.

b) The large number of "minor" streams should be replaced by a few, well defined major areas of concentration as projected in the development plan.

c) All students should receive a Bachelor of Science in Environmental Design degree after four years of study.

d) Selected students should be permitted to go on to a fifth year programme leading to the Bachelor of Architecture degree. This fifth year should be constituted as a graduate programme.

e) The use of the studio workshop space to give each student a chance to express his/her territorial urge is somewhat irresponsible. Many more students can be accommodated in a first rate programme if the arrangements for the use of the studio space were as rational as the designs the students are taught to provide for "others".

f) Joint appointments of new teachers with other disciplines seem possible here and should be encouraged.

3. Waterloo University

a) The work-study programme is a unique feature of the curriculum. It should be sustained, however difficult this may be during a slow down in construction activity.

b) The initial reason for the creation of the architectural programme at Waterloo, that is the emphasis on computer-aided design has vanished. The work-study programme is seriously disadvantaged by the location. The programme would be better supported in a university nearer to Toronto which has a programme in environmental studies. York University or Queen's University seem to be more likely homes for this programme.

c) The funding, staffing ratios and space allocation for this programme are clearly sub-standard. The programme's position in the Faculty of Environmental Science is equally unsupportive as its earlier position in Engineering. If the programme is to remain at Waterloo, the maintenance of suitable quality is dependent on the creation of an autonomous school, funding commensurate with the other two university programmes and the provision of an adequate facility on campus.

d) Waterloo should re-establish a small, research oriented graduate programme in computer-aided architectural design in cooperation with the Schools of Engineering and Computer Science. In a period from five to ten years hence, if the graduate research programme is able to establish realistic ties with professional practice, a new undergraduate architectural programme with this emphasis should be initiated at Waterloo.

e) The curriculum of this programme is in need of a thorough reconsideration and redesign.

f) The library resources are unusually weak.

4. University of Toronto

a) The great strength of this programme is the way in which it makes good use of a modified version of the traditional atelier system of the Beaux Arts.

b) Nevertheless, the best atelier is poorly suited to undergraduate education. Five years of this system seem excessive as compared to three years required at schools with similar attitudes and aspirations such as Harvard, Yale, Princeton and other "Ivy League" graduate architecture programmes in the US.

c) The professional degree programme should be shifted to the graduate level and lead to the Master of Architecture degree (in two years for those with previous architectural education and three years plus summer work for those with baccalaureate degrees in other fields).

d) A new undergraduate programme in the Humanities' Faculty with a concentration in architectural studies should be started. This should lead to a Bachelor of Arts degree in four years. Concentration should be in the areas of art, history, literature and philosophy. Studio courses should be provided in the final two years. These should be organized as teaching studios as appropriate to undergraduate work, not as tutorials. Previous degree candidates for the MArch from non-architectural disciplines should be required to pass these studios and supporting professional courses to qualify for the MArch programme.

e) While the principal strength of the faculty should be their ability to make discerning judgements about the meaning and effects of architectural space and form, some way must be found to prevent the strength of conviction that supports such judgements from destroying the school's sense of collegiality. No programme, however strong can survive without the collegial spirit which the university must harbor.

CONCLUSION

While this report is much longer than the consultant would have liked, the full explanation for many recommendations and suggestions could not be included. I will be most pleased to meet further with representatives of the four schools and with the Architecture Study Planning Group for further clarification of my judgments.

APPENDIX E

Report to the
Architecture Study Planning Group

Council of Ontario Universities

SPACE REQUIREMENTS

FOR

PROGRAMMES OF ARCHITECTURE

Prepared by

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June, 1975
Revised July, 1975

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1. INTRODUCTION

This report addresses itself to item 5 of the terms of reference of the Architectural Study Planning Group (ASPG) viz., to examine and evaluate present space and physical resources available to programmes of Architecture at Carleton, Toronto and Waterloo Universities and at Ryerson Polytechnical Institute. Comparisons are made between the present space inventories and the space generated by the Interim Capital Formula as applied by the Ministry of Colleges and Universities (MCU) as well as the space entitlement as determined by the COU Building Blocks Space Formula. In addition, some consideration is given to the quality of the present space and its location with respect to other campus facilities. Recommendations are made concerning the action to be taken to accommodate the increased enrolments that are proposed by the ASPG.

2. REVIEW OF SPACE FORMULAE

It must be emphasised at the outset that caution must be used in attempting to determine programme needs from space formulae that are designed to satisfy the needs of an institution. The Interim Capital Formula is a macro-formula in that its sole objective is to find a way to distribute capital funds in an equitable manner amongst the provincially supported universities of Ontario. Some attempt is made to reflect the needs of different programmes by assigning weights to students enroled in each programme, but it should not be assumed that the assigned weight is an indication of the precise space needs of the programme. Some programmes, require more space and others less than that generated by the weights.

The COU formula takes a more detailed approach by identifying all of the space types required to meet the needs of the institution and suggesting a space factor for each category. Some categories may be referred to as 'university' space, (e.g. athletic space, dining halls, etc.) in that they serve all students equally. Other categories are considered to be 'departmental' space, (e.g. labs, faculty offices) since they are usually allocated for the exclusive use of one department. Lastly, some categories fall in

between these extremes, e.g. classrooms and library space, where the total space generated may be divided between the 'university' and the 'department'.

In the Interim Capital Formula, the undergraduate in Architecture is assigned a weight of 1.5 (the highest value assigned to any undergraduate programme) which generates 144 assignable square feet per student. Table 1 suggests an appropriate space factor for each of the space categories defined by the COU space formula. It can be seen that the total exceeds that generated by the Interim Capital Formula. However, the difference can be considered quite small, in the context of the total university space entitlement for all programmes and therefore in itself would hardly justify a change to the Interim Capital Formula, unless all other programmes were given a similar assessment.

Because of the differences in academic organizations and space allocation policies at the four institutions it would not be wise to suggest only one model for the distribution of space between the 'university' and the 'department' therefore a range of values are shown which provide for the minimum and maximum amounts of classroom or library space that could be allocated to the department. It is expected that for each of the schools, the answer will lie within these values.

TABLE 1

	Space Type Space Type	Department Space/Student	Total Space/Student
1.	Classroom	2 - 12	12
2.	Class lab/Studios	75	75
3.	Research	-	-
4.	Faculty Office	16.5	16.5
5.	Library	2.5-17.5	17.5
6.	Athletic	-	10
7.	Administration Off.	-	10
8.	General Use	-	17
9.	Special Use	-	6
		96-121	164

Note: Category 8 included Food Services, Bookstore, student lounges and assembly spaces.

Category 9 includes Shops, Computer, Audio-visual and Student health care facilities.

2.1 Classrooms A generally accepted planning standard for classroom space is 1.0 assignable square foot per weekly student contact hour. After examining the lecture content of the programmes at the four institutions it would appear that provision should be made for an average of 12 student hours per week of lectures. The 12 square feet per student thus generated may be divided between the schools/departments and the universities, as determined by each institution. Given the enrolments proposed by the ASPG the department's minimum allocation should be sufficient to provide 2 or 3 seminar rooms for the exclusive use of the department.

2.2 Class Lab/Studios Provision of this category of space is at the very core of the problem of estimating the needs of programmes in architecture. The view is widely held in schools of architecture that each student from first year onwards must have a home base or work station, (i.e. drafting board, etc.) for his own exclusive use all day and every day throughout the academic year. However, the constraints on university financing make this a very difficult objective to achieve. Bernard Spring referred to this approach as "a glorious way to study Architecture"[1] but subsequently confessed his institution could not afford it. The amount of space required is normally based on the scheduled activity which will occur in the labs/studios. An appropriate space factor (square feet per student contact hour) is applied to the number of scheduled hours to obtain the space requirement.

Because the recommendations in this report are made in the form 'space per student' it is necessary to make some assumptions concerning the number of student contact hours in studio work that are required by the programmes. A further complication results from the proposals to introduce new degree programmes with varying degrees of

1 Report to Architectural Study Planning Group by Bernard Spring 3/28/75.

emphasis on studio-based work in the early years.

In calculating studio/lab space requirement, it is assumed that the room can be scheduled at least 18 hours per week. The stations thus generated as a result of 18 scheduled hours are then available for the balance of the week for individual study/project assignments. The studio requirements for upper year students amount to at least 18 hours per week, therefore there is no doubt that an assigned station can be supported for all upper year students. However, students in the lower years (or those taking architectural courses towards a primary degree) will average 6 to 9 hours per week depending on the concentration of studio/workshop courses therefore they would require the equivalent of one third to one half of an individual student station.

The square foot allowance for a student station must include not only the drafting station but also the supporting labs and studio service areas (e.g. photographic areas, workshops, etc.). The suggested allowance for the base station is 60 square feet and the additional allowance for support space (normally 30-35% of the base station) should add another 20 square feet. Finally I would suggest a further 10 square feet per student to meet faculty requirements (see next section 2.3) thus making the student station allowance total 90 square feet. In other words, students in the 'Professional' years of architecture studies would generate 90 square feet each for studio/workshop courses, while those in the preparatory years would generate 30-45 square feet. Obviously the overall average will vary at each school depending on the mix of students by year and the concentration of studio-based work. For the purpose of this report however, an average of 75 square feet per student is recommended.

2.3 Research As mentioned earlier, this category was defined in the COU space formula and the fact that I recommend no space allowance here should not be misconstrued. Until now, very few separate facilities have been created to accommodate faculty research. Such

research usually has taken the form of consulting or 'on-site' investigations, which have placed little demand on campus facilities. In the expectation, however, that fundamental research within the schools will increase (as recommended by the consultants) an allowance was made in the previous category to accommodate this activity. By combining the allocation for all special purpose space into one factor, it is felt that more flexibility exists for each school to determine how its space is to be used.

2.4 Faculty Offices The proposal here is derived from the revised COU recommendation of 200 square feet/F.T.E. faculty and is based on the assumption of an average faculty/student ratio of approximately 1:12 which takes into consideration the recommendations for undergraduate and graduate programmes.

The allowance for faculty offices is of course intended to cover the requirements of academic support staff and office related space such as, conference room,office storage, etc.

2.5 Library It should not be necessary here to debate the merits of centralized versus decentralized library operations. The distribution of library space recommended in Table 1 will likely vary amongst the schools according to institutional library policy. However, the minimum allocation to each department should be sufficient to create a departmental reading room which would hold the equivalent of 5,000 volumes and provide 20-30 study places.

3. FACILITIES FOR GRADUATE PROGRAMMES

3.1 MArch (Academic) Graduate students place a greater demand on laboratory and library space over that suggested in Table 1. They should also be allocated some office space since they are likely to be employed as teaching (or research) assistants. It is recommended therefore that 200 N.A.S.F. be allocated for each graduate student. The weight of 3.0 assigned under the Interim Capital Formula is sufficient to cover both the 200 N.A.S.F.of Department space and

approximately 70 N.A.S.F. of university space.

These recommendations are based on a 1-year master's programme. A more detailed appraisal would be required to determine whether a 2-year programme should be supported to the same extent (i.e. space per student).

3.2 MArch (Professional) The 'preceptorship' programme which is recommended by the ASPG is not unlike the internship requirements of the Health Services, in that this stage of professional training is largely done "in the field". As a result, it places very little burden on university physical facilities. It is interesting to note that under present government funding formulae, interns are assigned a weight for operating grants but are not eligible for capital grants. However, it has been suggested by the Group that approximately 25% of the course requirements will have to be accommodated by the University for lecture and/or lab work. On this basis I would recommend 50 square feet per student in this programme.

4. REVIEW OF EXISTING FACILITIES

4.1 Toronto The School at Toronto is gradually being squeezed out of its present quarters by the expansion of programmes in Landscape Architecture and Urban Planning. At the present time, it is experiencing difficulty accommodating current enrolment levels, therefore it is out of the question to consider any increase in enrolment until decisions are made concerning a major re-allocation of space, (possibly the relocation of at least one of the programmes). With the dissolution of the Faculty, it is possible that space previously charged to the Faculty can now be allocated to architecture. This would have the effect of increasing the school's inventory from approximately 22,000 to 34,000 square feet. Besides relieving current pressures, it would also facilitate the transition from the present degree programme to the proposed BA and BArch programmes as well as providing for the introduction of MArch (Professional) programme.

With the proposal to introduce a 3-year BA programme prior to 2 years of professional study, the Departmental space requirement could be estimated roughly as follows:

150 BA students at 100 sq. ft. each	=	15,000	sq.ft.
140 BArch students at 115 sq. ft. each	=	16,100	" "
20 MArch (Academic) at 200 sq. ft. each	=	4,000	" "
75 MArch (Professional) at 50 sq. ft. each	=	3,750	" "
		38,850	

While this is only a rough approximation of the space needed by architecture, it is close enough to demonstrate the present building of approximately 48,000 N.A.S.F. can no longer accommodate all three departments. However, if either Landscape Architecture or Planning were to be re-located and some funds were made available for renovations in order to make the space more efficient, then I believe the building could continue to meet the needs of architecture in the context of the recommendations of ASPG.

4.2 Waterloo Waterloo's space problems are two-fold. First the location being off-campus, hinders the involvement of the School in the larger communities of the Faculty of Environmental Studies and the University-at-large. This can only lead to an unhealthy isolationism. The space inventory has been barely adequate to this point to accommodate the program but the problems will worsen in fall '75 and through the next two years as a result of the co-operative school/work stream which brings together all five years of the programme at the same time. This hasn't happened since the School reached its present steady state enrolment. Some emergency measures will have to be taken to provide a temporary solution to the problem.

In the absence of a development plan for the School at Waterloo it is not possible to predict their final space requirements. It is essential therefore that the role of the School be clarified as quickly as possible so that the academic plan can be evaluated in terms of physical requirements and a suitable project can be submitted

for approval.

4.3 Carleton The architecture building at Carleton contains approximately 39,000 assignable square feet of which some 33,000 are assigned to the School at the present time.

The Carleton School has a distinct advantage over the others in that it is the only one that has had a building built to serve its specific needs. However, the experience gained during the first few years of occupancy suggests that some improvements in space utilization can be achieved with minor alterations to the building. Additional usable space could be obtained through the construction of mezzanines in locations where the structure can accommodate them. If such changes were made to the building, the School could accommodate an increase in enrolment from its present level of about 285 undergraduates to approximately 350.

Even if the total space in the building were available to architecture it would not be sufficient to accommodate all of the proposals for future programmes and enrolments. At some point in the future therefore an addition to the present building should be considered.

4.4 Ryerson The enrolment projections for Ryerson are not substantially different from the present numbers and the Department's facilities, although somewhat dilapidated, appear to be accommodating the programme reasonably well. However, the present quarters are leased and the lease expires in September, 1979. I understand there is little prospect of a renewal by the owner. It is essential therefore that preliminary planning be undertaken in the very near future to determine an alternate site for the Department's operations. With the lead time required for provincial government approval of funding, user committee planning, design and construction it is necessary that the project be approved in the next budget year in order to be ready for fall '79. The new facility would be approximately 40,000 N.A.S.F. in order to accommodate a programme similar in magnitude to the present

one. However, with the proposal that the enrolment at Ryerson could eventually increase to approximately 800 undergraduate students it is essential that the site selection and design for the new facility provide for an expansion that would virtually double the size of the initial building.

5. SUMMARY OF RECOMMENDATIONS

Most space formulae are best applied in macro fashion at the institution level. As such, the figures used above can at best be considered as 'averages', but should provide reasonable guidelines for future planning. Each school/department has the choice to vary the use of space within the overall allocation, indeed each institution may choose to allocate to the architecture programme more or less of its available resources from Capital Grants in order to realise its priorities. Notwithstanding that possibility the following is recommended.

5.1 Toronto

Immediate Requirements A re-allocation of space within the present building is essential. The School's inventory is inadequate for the needs of the present enrolment. In order to accommodate the proposed changes in the undergraduate programme the inventory should be increased to approximately 31,000 square feet. Depending on the space made available, funds should be allocated for alterations and renovations so that the space can better serve the specific needs of architecture.

Intermediate-Range The School will require another 8,000 square feet approximately to accommodate the master's programmes (i.e. 75 professional and 20 in the academic stream).

Long-Range With a further increase in graduate studies being proposed, it is likely the School will require a further 4,000 square feet to accommodate an additional 20 master's students. This would then represent a total inventory of approximately 43,000 N.A.S.F.

5.2 Waterloo

Immediate Requirements It is essential that a development plan for the School be produced as soon as possible and a decision made with regard to the position of the School within the University. This is necessary before any physical planning can be done and yet the space needs of the School are critical. Immediate action is required to resolve the problem of fall, 1975, when the enrolment (on-campus) will increase by approximately 20% with no increase in space.

Because the School now occupies temporary (rented) accommodation off-campus it is desirable that a permanent facility on the main campus be provided and planning for this should commence as soon as possible.

5.3 Carleton

Immediate-Requirements Funds should be made available for an alteration project which would permit more effective use to be made of the present facilities. This would permit the School with its present inventory of approximately 33,000 NASF to accommodate the proposed increase in the undergraduate enrolment to say 350 students.

Intermediate-Range With the proposed introduction of the MArch (Prof.) programme and a further increase in the undergraduate body to approximately 400 students the School would require all of the space in the Architecture Building, (approximately 6,000 NASF is now allocated to various other University departments). If this is not considered feasible because of other University needs, then it would be necessary to consider an addition to the building. The additional space required by Architecture, by itself, would not justify an addition but it is possible that it might be combined with the needs of some other departments (e.g., Industrial Design, Engineering, etc.). If such an addition is provided it should include sufficient space

also to accommodate the long range plans for graduate studies since it would not be economical to plan a 2-phase expansion of such small increments. The total space required to accommodate all of the proposed programmes in Architecture is estimated to be approximately 45,000 N.A.S.F.

5.4 Ryerson

Immediate Requirements Since enrolment is not expected to change in the next few years, the present space should adequately serve the Department of Architectural Science until the lease expires in 1979. Planning should commence within the next year for a new facility.

Intermediate-Range With the proposal for a great increase in enrolment to approximately 800 students care must be taken in the site selection and design of a new facility. It is possible that by 1979 when the new building is needed the freshman intake may already be on the increase. Therefore it seems that there are two alternatives available depending on the rate of increase towards the projected enrolment. The first is that a new building of approximately 40,000 square feet be built to accommodate the present enrolment, but so designed to accommodate a major expansion to say double the initial size. If however, the success of the programme indicates that the expansion would be required within five years (i.e., 1984 or earlier) then it might be better to build the total facility (approximately 75,000 - 80,000 square feet) in the one stage of construction. The additional space could be used by other University departments until such time as Architecture requires it - or it might be rented out to non-University users.

APPENDIX F

ONTARIO ASSOCIATION OF ARCHITECTS

POSITION PAPER

Prepared by

Brian Parks

March, 1975

ONTARIO ASSOCIATION OF ARCHITECTS
POSITION PAPER ON PROFESSIONAL REQUIREMENTS

A. Introduction:

This paper has been prepared by representatives of Council, and the Registration Board, in response to Item 9 of the Terms of Reference of the Council of Ontario Universities' Study Group on Architecture, which reads as follows:

> "Solicit views of the Ontario Association of Architects for major developments in professional requirements over the next several decades."

These views are being sought in order to assist in the aims of the Study Group: their aims are to make recommendations

a) for the further development of present Schools of architecture, and

b) on desirable provincial enrolments, society's need of architects' services, and distributions of enrolment.

While it is unclear to the OAA, on the information furnished, what the basis for such recommendations is intended to be, and while it is considered impractical to give responsible consideration to "the next several decades" within the time-frame allowed, the OAA is prepared to make certain statements with regard to its position respecting professional requirements.

B. OAA Position regarding Candidates for Registration:

The OAA has recently prepared a paper entitled Minimum Performance Criteria for Candidates Seeking Registration. This document defines, in outline form, the requirements of the Registration Board, which are normally met by the candidate who has successfully completed

a) a five-year accredited course of formal studies

b) a three-year period of architectural "internship" under the direction of practising architects

c) a Registration Course conducted by the Registration Board

The OAA is presently developing a method of measurement against the Minimum Performance Criteria, in order that it can be used to test the RAIC Minimum Syllabus Programme, and as an aid to determine desirable "weighting" in the curricula of the Ontario Architectural Schools. This method of measurement is also expected to be applied as a yardstick to evaluate the curricula of schools outside the province.

C. OAA Position regarding Schools of Architecture:

The OAA considers that a School or Department of Architecture is by definition an academic facility for the study of architecture, committed to preparing its graduates for a professional career in architecture.

To achieve this commitment, we believe it is absolutely necessary for a school to provide a core curriculum having sufficient coverage in the practical aspects of construction as well as the theory and application of planning and design. We cannot stress too strongly the fact that the public, whom we serve, is entitled to expect from architects not only beautiful buildings, but practical, well planned, functional and economical buildings. Such a core curriculum, providing the basics of architectural understanding, should be fundamental and mandatory.

While a pre-qualification course might provide a foundation for architectural undergraduates and those of related disciplines, such as environmental sociology and landscape architecture, the "architectural" course of study should be tailored to those who wish to "practise" architecture, or wish to move further into advanced town planning or other post-graduate studies.

While we believe that it is essential for the architect to understand the requirements of structure, and other major engineering aspects of building, he must also have a sensitivity to materials, and their uses and limitations.

Economics and business training must of necessity, form a part of the undergrad's curriculum. Project financing should be studied as well as world economic forces. Other areas of importance in the instructional programme are, (a) the graphic arts, and sculpture;

(b) philosophy and psychology;

(c) English, including writing;

(d) working knowledge of mathematics, and computer science.

We must emphasize that an undergraduate's training must prepare him for his immediate occupation upon graduation, or he cannot earn a living providin a service which the public expects. We also recognize, that architecture, along with all professions, is constantly undergoing change. It is imperative, therefore, that the undergraduate be given a very broad training as well as exposure to specific knowledge and techniques, so that he can adapt to changing conditions as they emerge.

D. Registration Board Position regarding the Registration Course:

In the early 1960's it was found necessary to establish the Registration Course, because of the large numbers of candidates seeking registration who had little knowledge of, or familiarity with, Canadian conditions of practice. The course was first set up in three groups of subjects, and latterly restructured into two groups:

Group 1, consisting basically of the legal aspects of architectural practice; and

Group 2, consisting of technical subjects oriented to Canadian conditions.

It is the general opinion of the Board that the Group 1 subjects should continue indefinitely to be conducted under the direct control of the Board, and that the Group 2 subjects should, if possible, be transferred to one or more of the academic facilities in the province. Until such time as a satisfactory transfer can be implemented, the Board is, of course, prepared to continue the Group 2 subjects as a part of the Registration Course.

It must be emphasized that, as far as is presently known, none of the Ontario Schools of Architecture conduct curricula which would enable the Board to exempt their graduates from the Group 2 subjects.

E. OAA Position regarding Future Needs of the Profession:

At the present time, the OAA is lacking in information upon which to base positive forecasts for future needs: for example,

a) no OAA data exists regarding the number of graduates from Ontario Schools of Architecture who subsequently become registered by the OAA or other component associations of the RAIC;

b) inadequate OAA data exists regarding the numbers of present members who actively engage in, or are employed in architectural practise as opposed to allied fields;

c) no OAA data base exists for the definitive determination of requirements for new registrants each year, or the proportion of new registrants who should be graduates of Ontario or other Canadian Schools.

Dependent upon the findings and recommendations which may emerge from the COU Study Group, it may become appropriate for the OAA to address the matters outlined above, commencing in the fall of 1975, in consultation with the Schools.

Meanwhile, it would appear to be axiomatic, in a highly simplistic sense, that the proportion of architectural graduates relative to the population of the country should steadily increase. This opinion is based on the perceived need for increasing architectural input into the solution of problems relating to urbanization and the built environment which the rising generation must inevitably face.

Obviously, the profession would strongly urge the COU Study Group to bring all the influence of which it is capable to bear on the encouragement of "architectural" exposure at the secondary schools, and indeed at primary education levels. The public at large, in a growing society, needs to develop an active awareness of the effects of design, building materials, urban planning and land use on every day living. Every effort should be made to stimulate public interest in the built environment through its people, its governments, its schools and teachers at every level.

The corollary to expanding architectural interest in education is the expansion of opportunity for post-secondary continuing architectural education. The further corollary to increased university enrolment capacity is the expansion of opportunities for the pursuit of research, the influencing of decision-making in many aspects of the building industry, in private and public corporate bodies, and at all levels of government, and in other outward-looking fields, as well as the conventional areas of traditional architectural practice.

APPENDIX G

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

Prepared by

N. Sisco

1974/75

AT Chart Number 8
ruary 1974
ege Affairs Branch
stry of Colleges
Universities
vince of Ontario

Colleges of Applied Arts and Technology Programs

Code No.	Program	
	Technology/Technician (Eng.) (cont'd)	
	Control Systems	
2165114	Construction	
2163199	Drafting–Engineering, Electrical	
2163126	Drafting–Architectural, Structural	*
2163154	Drafting–Mechanical, Mechanical Services	
2163110	Drafting–General	
2165126 226	Electrical	
2165130 230	Electronics	
2143130	Environmental Engineering Control	
2165122	Fire Protection, Industrial Safety	
2165159	Fluid Power	
2135168	Food Processing–Food Laboratory	
2117118 242	Geological	
2165	Industrial Engineering, General Maintenance	
2165134 238	Industrial Instrumentation	
	Industrial Management	
	Industrial Microbiology	
2165142 246	Mechanical	
2165146 250	Metallurgical	
2165150 254	Mining (Including Geology and Metallurgy)	
	Plastics, Rubber, Production and Design	
2143130	Pollution Control	
2165	Power	
2165134 238	Production Control, Manufacturing	
8311110	Tool and Die Design	
8311130	Tool and Die Making	
	Transportation Planning	
2159142	Welding	
	Materials Joining	
	Technology/Technician (General)	
	Acoustics	
9113126	Air Transport (Aviation Management	
8582110	Aircraft Maintenance ('A' or 'B')	
9119199	Aviation and Flight, Helicopter Pilot	
	Avionics	
2165114	Architectural	*
3156110	Bio-Chemical, Bio-Science	
2165199	Building Environment Systems	
2163114	Cartography	
2117248	Coatings	
262	Combustion	
2165222	Concrete	
2165299	Electro-Mechanical	
2165230	Electronics (General)	
2135248	Floriculture	

College
Algonquin (Ottawa)
Algonquin (Pembroke)
Cambrian (Sudbury)
Canadore (North Bay)
Sault (Sault Ste. Marie)
Centennial (Scarborough)
Conestoga (Kitchener)
Confederation (Thunder Bay)
Durham (Oshawa)
Fanshawe (London)
George Brown (Toronto)
Georgian (Barrie)
Humber (Etobicoke)
Lambton (Sarnia)
Loyalist (Belleville)
Mohawk (Hamilton)
Niagara (Welland, St. Catharines)
Northern (S. Porcupine)
Northern (Haileybury, School of Mines)
Northern (Kirkland Lake)
St. Clair (Windsor-Chatham)
St. Lawrence (Kingston)
St. Lawrence (Brockville)
St. Lawrence (Cornwall)
Seneca (North York)
Sheridan (Oakville, Brampton)
Sir S. Fleming (Peterboro, Cobourg)

ARCHITECTURAL TECHNICIAN AND TECHNOLOGY PROGRAMMES

Colleges of Applied Arts and Technology

December, 1974

	Semesters	Com.	T'n	T'y	Total
Algonquin	6	100	72	45[1]	217
				65[2]	
Centennial	6	96	54	20	170
Confederation	6	37	14	2	53
Fanshawe	6		32	112	144
Humber	6	65	25	20	110
Loyalist	4		20		20
Mohawk	6		42	91	133
St. Clair	6			97	97
TOTAL					1009

Also
Arch. Drafting T'n (Geo. Brown C.
(Fanshawe C.
(Northern C.
(Sault C.

2 yr. programmes (4 semesters)

[1]English Language
[2]French Language

PREFACE

This booklet contains monographs for the Architectural Technician and the Architectural Technologist.

The contents were prepared by the Consultative Committee for Architectural Programs consisting of members representing the Association of Architectural Technologists of Ontario and the Ontario Association of Architects, the Colleges of Applied Arts and Technology in Ontario, and the Applied Arts and Technology Branch of the Department of Education. This booklet is intended as a clarifying standard for the information of the general public, professional institutions, placement institutions, industry, business, secondary schools, and colleges. The information contained in this booklet should serve several purposes:

(a) clarification of the nomenclature relating to architectural technology and technician programs

(b) clarification of the level of instruction expected

(c) clarification of the vocational capacity of graduates

(d) provision of reference material for the purposes of job description and job evaluation by companies employing architectural technicians and technologists

(e) provision of reference material for use in guidance offices of secondary schools

(f) provision of reference material for the information of prospective college students.

These monographs are intended to allow reasonable freedom of interpretation of program content, but at the same time to be relatively specific concerning the educational maturity expected, the tenor of instruction, and the range of vocational opportunities available to graduates.

For further information contact

The Secretary,
Consultative Committee for
Architectural Programs,
Applied Arts and Technology Branch,
55 Eglinton Avenue East,
TORONTO 315, Ontario.

April 19, 1971.

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

A MONOGRAPH FOR THE ARCHITECTURAL TECHNOLOGIST

ADMISSION REQUIREMENTS

The Ontario Secondary School Graduation Diploma at the appropriate level or a qualification considered by the Board of Admissions of the college to be of equivalent standing.

Note:

1. Normally, applicants will be expected to have completed successfully the English, mathematics and science subjects at the appropri e Ontario Grade 12 level or the equivalent.
2. A college may offer entrance examinations to assess the ability of applicants who do not have a clear admission.
3. A college may offer special courses to prepare applicants to meet the admission requirements.
4. For details of the specific admission requirements for a particular college, applicants should consult the college calendar.

PROGRAM OF INSTRUCTION
3-Year Full-Time Program or Equivalent

A typical program of instruction offered by a college will include subjects selected from the following list.

Liberal Studies (15% - 20%)

* Humanities
* Communications including Technical Reports
* History of Architecture
  Urban Environment Studies
  Economics

Mathematics and Science (15% - 20%)

* Algebra and Trigonometry
  Introduction to Calculus
  Statistics
  Descriptive Geometry
* Physics
* Mechanics

Technical Specialty and Related Technical Subjects (70% - 60%)

* Architectural Drafting
* Materials and Methods
* Architectural Design and Planning
  Architectural Presentation
  a) Rendering
  b) Model Making
  c) Free Form Development
  Quantity Surveying and Estimating
  Specifications
* Codes and Regulations
  Surveying
* Environmental Engineering
  a) Heating and Ventilating
  b) Air Conditioning
  c) Plumbing
  d) Electrical
* Structural Design
  Business and Project Management
  Mechanics of Materials
  Computer Systems
  Architectural Landscaping

* See section below on certification.

CERTIFICATION
By the Association of Architectural Technologists of Ontario

A graduate who has completed a program of instruction which included the subjects marked with an asterisk (*) and subjects selected from the list of Related Technical Subjects, and who has completed three years of satisfactory practical experience in employment, including at least one year under the supervision of a Registered Architect, meets the educational and experience requirements for certification as an Architectural Technologist. Further enquiries regarding certification and membership should be directed to the Registrar of the Association of Architectural Technologists of Ontario, P. O. Box 962, Postal Station 'F', Toronto, Ontario.

POTENTIAL EMPLOYMENT OPPORTUNITIES

An Architectural Technologist will have a broad knowledge of building construction. His functions will vary widely from relatively simple tasks of a recent graduate to complex technical responsibilities of a job leader. Graduates may anticipate career opportunities in the areas of employment listed below.

EMPLOYER	FUNCTIONS OF TECHNOLOGIST
Architectural	
Private practice, commercial industrial and government organizations	Job captain, architectural assistant, project manager, senior draftsman, field supervisor, co-ordinator, specifications writer
Construction Industry	
Contractors, subcontractors, and developers	Estimator, co-ordinator, interpreter of contract documents, clerk of works, foreman
Related Industries	
Banks, real estate and insurance companies	Inspector, appraiser, job co-ordinator, drawing interpreter
Component Design	
Architects, engineers, industrial, interior and commercial designers	Job captain, specifications writer, estimator, expediter, field supervisor, model maker
Government	
Federal, provincial and municipal governments	Plan examiner, inspector, assistant commissioner
Consultants	
Acoustics, laboratory, audio visual and cost consultants	Co-ordinator, document preparer, specifications writer, supervisor
Educational Institutions	
Secondary schools, colleges and universities	Instructor, laboratory assistant
General Industry	
Manufacturing, supply and sales organizations	Detail and development draftsman, representative (systems), salesman

Consultative Committee for Architectural Programs,
Applied Arts and Technology Branch,
Ontario Department of Education,
55 Eglinton Avenue East,
Toronto, Ontario.

March 1971.

COLLEGES OF APPLIED ARTS AND TECHNOLOGY

A MONOGRAPH FOR THE ARCHITECTURAL TECHNICIAN

ADMISSION REQUIREMENTS

The Ontario Secondary School Graduation Diploma at the appropriate level or a qualification considered by the Board of Admissions of the college to be of equivalent standing.

Note:

1. Normally, applicants will be expected to have completed successfully the English, mathematics and science subjects at the appropriate Ontario Grade 12 level or the equivalent.
2. A college may offer entrance examinations to assess the ability of applicants who do not have a clear admission.
3. A college may offer special courses to prepare applicants to meet the admission requirements.
4. For details of the specific admission requirements for a particular college, applicants should consult the college calendar.

PROGRAM OF INSTRUCTION

2-Year Full-Time Program or Equivalent

A typical program of instruction offered by a college will include subjects selected from the following list.

Liberal Studies (15% - 20%)

* Humanities
* Communications including Technical Reports
  History of Architecture
  Economics

Mathematics and Science (15% - 20%)

* Algebra
* Trigonometry
* Mechanics (Statics)
  Physics
  Descriptive Geometry

Technical Specialty and Related Technical Subjects(70% - 60%)

* Architectural Drafting
* Materials and Methods
  Architectural Rendering and Presentation
  Architectural Design and Planning
  Surveying
  Quantity Surveying and Estimating
  Codes and Regulations
* Engineering Drafting and Installations
  (Two of the following required for certification)
  a) Structural
  b) Mechanical
  c) Electrical
  Computer Systems
  Mechanics of Materials

* See section below on certification.

CERTIFICATION

By the Association of Architectural Technologists of Ontario

A graduate who has completed a program of instruction which included the subjects marked with an asterisk (*) and subjects selected from the list of Related Technical Subjects, and who has completed two years of satisfactory practical experience in employment, including at least one year under the supervision of a registered Architect, meets the educational and experience requirements for certification as an Architectural Technician. Further enquiries regarding certification and membership should be directed to the Registrar of the Association of Architectural Technologists of Ontario, P. O. Box 962, Postal Station 'F', Toronto, Ontario.

POTENTIAL EMPLOYMENT OPPORTUNITIES

An Architectural Technician will have a basic knowledge of building construction. He may receive general direction from a technical supervisor who may be a technologist or an architect.

EMPLOYER	FUNCTIONS OF TECHNICIAN
Architectural	
Private practice, commercial, industrial and government organizations	Draftsman, checker, model maker, perspective and presentation draftsman, librarian for drawings, records and trade literature
Construction Industry	
Contractors, subcontractors, and developers	Expediter, draftsman
Related Industries	
Banks, real estate and insurance companies	Draftsman
Component Design	
Architects, engineers, industrial, interior and commercial designers	Draftsman, office assistant, model maker, checker
Government	
Federal, provincial, and municipal governments	Plan examiner, inspector
Consultants	
Acoustics, laboratory, audio visual and cost consultants	Draftsman, checker
Educational Institutions	
Secondary schools, colleges and universities	Teacher's assistant, trade literature assistant, laboratory technician, trade literature and records librarian
General Industry	
Manufacturing, supply and sales organizations	Draftsman, salesman, representative (materials)

Consultative Committee for Architectural Programs,
Applied Arts and Technology Branch,
Ontario Department of Education,
55 Eglinton Avenue East,
Toronto, Ontario.

March 1971.

APPENDIX H

MEMORANDUM CONCERNING UNIVERSITY OF TORONTO

Prepared by

D. Forster

Memorandum on the Structure of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture:

It has been suggested that I prepare a paper to facilitate discussion of the future structure of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. Such a review is appropriate in view of the recent retirement of Dean T. Howarth and the appointment of Professor G.D. Scott as Acting Dean of the Faculty for one academic year. In addition, a number of suggestions for restructuring or reorganization of the Faculty have been brought to my attention by various colleagues over the past two years. It should be stressed that the suggestions in this paper are simply proposals, not policy. I hope that they will be widely and fully discussed by all those concerned, members of the teaching staff in the Faculty, students, colleagues in other divisions and appropriate professional organizations.

The Faculty of Architecture, Urban and Regional Planning and Landscape Architecture was created in 1967 by a Statute of the Senate. At that time the School of Architecture became a department in the new Faculty together with a Department of Landscape Architecture and a Department of Urban and Regional Planning, each with a chairman. Instruction in architecture was first given in this University in 1890 when a Department of Architecture was established in the then School of Practical Science. The department was renamed the 'School of Architecture' in 1931 and in 1948 became an independent division of the University. Formal instruction in 'town and regional planning' was introduced first in 1933 and a Division of Town and Regional Planning was established during the 1952-53 session. A four-year undergraduate programme in landscape architecture was approved by the University Senate in 1965. The Department of Urban and Regional Planning has recently proposed the introduction of a doctoral programme in Planning which is currently under consideration. The Department of Landscape Architecture has requested the establishment of a master's level programme. The Department of Architecture has offered both an undergraduate and a master's level programme for many years.

It has been suggested that one reason for the establishment of the Faculty structure in 1967 was a hope that it would become a centre or focus for the development of general environmental studies in the University. With the establishment of the Institute for Environmental Studies and the rapid development of teaching and research in this area in other divisions of the University, the broader focus for the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture did not develop to the extent expected. Some observers, within and outside the Faculty, have questioned whether a separate faculty structure, as distinct from the departmental

structures, is necessary under current circumstances. I have been informed that the academic linkages among the three departments in the Faculty have not been particularly close and that, in fact, they might be increased by a different organizational structure, a structure which, in addition, must ensure the healthy development of the professional programmes.

I put forward the following proposals for discussion:

(1) I recommend that the position of Dean of the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture not be filled on July 1, 1975, and that the Faculty structure be dissolved. Hopefully, some economies would result which could facilitate the strengthening of programmes in the three departments.

(2) It has been suggested that the Department of Landscape Architecture become a department or programme, with a chairman or director, in the Faculty of Forestry which would be renamed the Faculty of Forestry and Landscape Architecture. I recommend that this administrative transfer take effect on July 1, 1975. Under this proposal, the Department of Landscape Architecture would maintain its identity and, under the general supervision of the Dean of the Faculty, would remain responsible for curriculum development and related matters.

(3) I recommend that the Department of Urban and Regional Planning report to the Dean of the School of Graduate Studies, effective July 1, 1975, and, for an interim period, have the status of a department in the School of Graduate Studies. The ACAP report on Planning and Environmental Studies noted and agreed with the comment of one member of the original PhD appraisals committee that linkages between the Department and other divisions of the University might be facilitated if the Department was separated from the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. Closer academic and administrative integration with the Institute for Environmental Studies and the Centre for Urban and Community Studies should be explored by the Dean and the Chairman of the Department of Urban and Regional Planning.

(4) I recommend that the Department of Architecture, effective July 1, 1975, report to the Dean of the Faculty of Applied Science and Engineering. Under this proposal, Architecture would maintain its identity as a department separate from the Faculty of Applied Science and Engineering but the responsibility of the Faculty's dean would be extended to be the reporting point for the Department of Architecture. The Department would maintain its own committee structure and responsibility for the development and implementation of curriculum and related matters under the general supervision of the Dean. If this proposal were implemented, I would expect the Department of Architecture to maintain its identity in every sense.

Current [illegible] at the University has made it extraordinarily difficult to deal with urgent space problems in the building on College Street currently occupied by the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. A short-term objective, if the above proposals were implemented, would be to relocate both the Department of Urban and Regional Planning and the Department of Landscape Architecture in other space leaving the Department of Architecture to expand within the building on College Street.

Copies of this report are being sent to a number of division heads for comment and I have asked that the report be widely distributed within the three departments in the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture. It would be appreciated if comments on the proposals could be forwarded to me by October 15.

September 6, 1974

D. F. Forster
Vice-President and Provost

III

SUMMARY OF UNIVERSITY COMMENTS

SUMMARY OF THE UNIVERSITY COMMENTS

ON THE

ARCHITECTURE REPORT

This is a summary of the university comments on the architecture report, focussing on recommendations not specifically concerned with a single university. Comments were received from Ryerson, Toronto, Carleton, McMaster and Waterloo.

Summary

The general tenor of the comments lends some support to the establishment of a body such as the AEBO, but there is strong opposition to the recommendation that it should have executive power. There also appears to be a consensus in support of a fifth year leading to professional certification, although not necessarily in the format proposed. Concern is expressed that the role of the proposed AEBO and the common professional year format would lead to an undesirable degree of uniformity.

AEBO

Carleton makes no specific reference to the AEBO other than commenting on "the strong professional concern evident in the report". The university supports with some reservations "the establishment of a fifth year leading to a degree in architecture designed primarily for professional qualification" (page 2, paragraph 1) but there is some disagreement as to whether it should be a master's or a bachelor's degree. Carleton notes that increasing regulation by the professional body of architects could have the consequence of inflicting uniformity on the four programmes (page 1, first paragraph). The last paragraph on page 3 points to the need for more detailed information on the proposed programmes before a decision can be reached.

Ryerson echoes the need for greater detail but notes that the AEBO would have "a benefical effect on teaching and practice in the province" (page 3, 2.2). It would be prepared to offer a programme leading to the professional MArch degree (page 8, 4.1). Ryerson was the only institution to comment on the membership of the AEBO. It felt that Board's membership should be increased to ten with equal university and OAA representation to reduce the adversary relationship (see summary, page 2).

Toronto suggests that the AEBO be an advisory body created for a given period of time with a review at the end of that period (page 1, first paragraph). The University disagrees with the recommendations giving the AEBO the power to accredit universities or assess programmes, which Toronto feels must be located in the graduate school and subject to the ACAP process. (See page 2, R4-a; page 3, R12-b,c). On the other hand, Toronto does agree that the MArch should be the degree required for certification in the profession of architecture. It would welcome advice from the AEBO on establishing and administering such a programme but the ultimate responsibility must remain with the university (page 2, R4-c).

cont'd

Waterloo is opposed to any non-university body having substantial control over what is considers a proper function of the university (see page 2). Because of the high level of control proposed for the AEBO, Waterloo does not support the MArch programme as proposed (see page 3, R45). It also does not support a graduate "preceptorship" programme along the lines described in the report, and indeed "the idea of normal or standardized undergraduate and graduate programmes under the very strong influence or control of the AEBO is perceived as undesirable..." (page 2, middle).

OASDA

Three of the institutions support a continuing role of OASDA (Waterloo, page 3, top; Toronto, page 3, bottom) although Ryerson would like further clarification of the duties and obligations of a discipline group before coming to a final decision (see page 7, 3.1).

Miscellaneous

Two universities comment on recommendation 35, concerning the library study, Waterloo to support it (page 3) and Toronto to agree in principle depending on the costs involved (page 6). Recommendations 16 to 19 deal with consulting practices for university staff and the definition of a full-time appointment. Each university appears to have developed its own policies (Ryerson, page 9, 4.2, 4.3; Toronto, page 4; Waterloo, page 3), though Carleton wishes to reserve comment on a contract research group (page 2, second paragraph).

May 24, 1976

IV

UNIVERSITY COMMENTS

Carleton University Comments on

STUDY OF ARCHITECTURE EDUCATION, PART I

Report of the

Architecture Study Planning Group

The Report of the Architecture Study Planning Group, taken as a whole, represents an attempt to study a segment of the university in a serious way. The reports of the consultants reproduced in Appendices A to E demonstrate a welcome familiarity and expertise in their consideration of Architecture in Ontario. It is our view, that their recommendations were at times not given sufficient weight by the Planning Group itself. We can only conclude that the strong professional concerns evident in the Report must, to a large degree, be responsible for the sometimes subtle and quite often obvious departures. Some specific instances are that it cannot be said that the consultants recommend a fifth year of architectural studies to be classified as a graduate, or more specifically, Master's program. The Report does however. In general the consultants recommend, sometimes quite specifically, that diversity in the programs be maintained at least and encouraged where there are not now sufficient, in their view, varieties of opportunities in the programs. The Planning Group, however, calls for increasing regulation by the professional body of architects which we expect could have the consequence of inflicting uniformity on the four programs. It must

be mentioned as a minor observation that it is refreshing to read such candid reports from consultants.

We see the Report in a context of diffuse and not precisely conceptualized concern for the environment; of student choices clearly affected by disenchantment with the vocational power of many kinds of university degrees, while architecture is professional, vocational, and highly paid; in a time of economic depression with no end in sight. In such a setting, influenced by a net deficiency in the country with respect to energy, we do not feel that the case for the significant expansion beyond what currently exists in architectural studies in Ontario has been sufficiently made. The current over-abundance of bright and capable applicants could in fact vanish rather quickly.

In specific terms, we agree with the ASPG recommendation for Carleton that we should consolidate and reorganize the program to establish a four-year program leading to the Bachelor of Environmental Design (Architecture), aimed specifically at a diversification of the program. (Recommendation 54). Such a program will, however, entail a modest increase in enrolment. We could only agree to such an increase if architecture were a designated area of growth and eligible for funding as such.

We also agree, although with reservations regarding university autonomy, with the establishment of a fifth year leading to a degree in architecture designed primarily for professional qualification. There is disagreement, however, within the University as to whether it should be a Master's or a Bachelor's degree.

We agree as well to consider ways and means to improve space utilization but assume that this will be limited by MCU policy with respect to capital funds. We wish to reserve comment on the question of a contract research group while expressing some agreement with Mr. Eberhard's statement, "I also would have serious reservations about a research centre that was organized primarily to market faculty consulting time, and only incidentally related to graduate education..." (p. C-22).

On the question of reorganization involving Architecture, Engineering, and perhaps other professional schools and academic departments, we must reserve comment since not even preliminary discussions on a topic with such widespread implications in the University have yet been held. (Recommendation 55) It is possible, however, that we may be able to consider reorganization which might involve an explicit coalition of Architecture, Industrial Design, and possibly all or some elements of Civil Engineering.

The remaining items in R-55, that is (c), (d) and (e) are largely covered by the previous comments.

R-56(a) will be given serious consideration of the Faculty of Graduate Studies and Research in light of whatever specific proposals the School of Architecture is able to develop. R-56(b) is reserved as noted above. (See Section 5.1(c) containing Recommendations 54-56.)

Referring now more explicitly to the consultants' reports, it can be said that we find ourselves more in agreement with the majority of their specific recommendations than is possible with respect to the recommendations in the body of the Report. For example, Professor Desbarats' recommendations are supported in general, except where they are in some conflict with reservations expressed earlier. The specific items involved here would be his recommendations 11, 12 and 13, p. B-31. The recommendations of Mr. Eberhard where they refer specifically to Carleton University are particularly endorsed.

Professor Spring in his submission makes an interesting point. "No institution of higher learning anywhere has found effective incentives to regularize cross-discipline cooperation except when massive research or development grants are available. This particular

incentive is not likely to be available to architecture in the foreseeable future." (p. D-7). In our view this statement focuses on one of the fundamental problems facing Carleton in the development of programs which must necessarily call upon already over-extended resources. Clearly if we were to follow the recommendation of Dean Desbarats with respect to an increased development of what might be called commerce and economics or to try and exploit what seems to offer felicitous cooperation with our School of Public Administration we would be calling for the use of resources which are already insufficient in existing programs. Our first priority must be to build up these existing programs and we may subsequently be able to consider the most reasonable way of providing additional resources for development in architecture through joint appointments. We do not concur with the concept of a new Faculty at this time.

More generally, we find the concepts in the Report interesting but consider that there is a distinct lack of detailed substance. There is a need for a more complete proposal dealing with both academic and administrative details of the proposed programs before a decision is taken on them.

McMASTER UNIVERSITY
Dean of Graduate Studies
1280 Main Street West, Hamilton, Ontario, L8S 4K1
Telephone: 525-9140

January 18, 1976

Dr. J. B. Macdonald,
Executive Vice-Chairman,
Council of Ontario Universities,
130 St. George Street,
Suite 8039,
Toronto, Ontario.

Dear Dr. Macdonald:

I have been asked by Dr. Bourns to reply on behalf of McMaster University concerning the study of Architecture education.

McMaster University has no plans involving Architecture education, either at the undergraduate or graduate level. We would assume that if there are plans for the development of doctoral programmes in Architecture designed for students planning careers in research and scholarship then such proposals would be viewed in the context of a provincial plan similar to those developed by the ACAP assessments. We are not convinced of the need for a province-wide assessment of Master's programmes in professional fields such as Architecture.

Very sincerely yours,

Leslie J. King,
Dean.

LJK/del

cc: Dr. A. N. Bourns

OBSERVATIONS AND COMMENTS BY RYERSON POLYTECHNICAL INSTITUTE ON THE RECOMMENDATIONS OF THE ARCHITECTURE STUDY PLANNING GROUP IN THE STUDY OF ARCHITECTURE EDUCATION PART I.

January, 1976

Summary

EDUCATION IN ARCHITECTURE

The study group sees the education of architects as a process in which registration, or licensing is one result of that process.

The education of an Architect, then, is seen to depend upon:

a) the division of the educational process into three parts - undergraduate, preceptorship and internship; and

b) the assignment of responsiblity for each phase of the process to a specific organization.

Thus Carleton, Waterloo, Toronto and Ryerson would be responsible for their undergraduate programs; while the "schools" and profession, under the aegis of the AEBO, would be jointly responsible for the "preceptorship" program and the OAA would be responsible for the internship studies.

It is apparent from the Report that the preceptorship proposal is one of the key recommendations of the Study Group because it represents one way in which the responsibilities of the "schools" can be separated from those of the profession in the undergraduate program; yet enable the "schools" and profession to act together in the exercise of their joint responsibilities in the preceptorship program, while the OAA would retain responsibility for the internship progam.

ARCHITECTURE EDUCATION BOARD OF ONTARIO

Society and the profession, in these circumstances would be best served if each university - Carleton, Waterloo, Toronto and Ryerson - was

represented on the AEBO and the profession, through the OAA, was represented by four members on that body. This arrangement would create a ten-man board, for two representatives are appointed by the OCUA and Lieutenant Governor.

A balanced membership is important in the success of the AEBO because it acknowledges that the OAA's responsibility in registering a graduate is equal in importance to that of a university's in granting a degree to the same graduate.

This composition would also have an advantage in that it may tend to reduce the "adversary" positions often adopted in the present relationships between the universities and profession.

ONTARIO ASSOCIATION OF SCHOOLS AND DEPARTMENTS OF ARCHITECTURE

The primary role of OASDA in the proposed structures for education in architecture is that of a motivator, co-ordinator, and facilitator of the plans formulated by the schools and departments.

It is worth reiterating that the success or failure of the ASPG proposals, in the final analysis, depends upon the ability of the "schools" and profession to work together, in a spirit of harmony for the good of society.

1.0 GENERAL

1.1 OBSERVATION:

The recommendations contained in the Study of Architecture Education, Part I, are primarily concerned with "orderly development of education in architecture".

REFERENCE: ASPG REPORT, PART I, Pg. 1

COMMENT:

While it is difficult not to agree with a proposal for the orderly development of education in architecture it should be reiterated that the achievement of this goal is possible only if there is a spirit of co-operation between the schools, departments, and profession.

1.2 OBSERVATION:

The major emphasis in the ASPG Report is upon "professional education" although some consideration is given to M. Arch. (Academic) programs. This distinction implies that some education in architecture is not professional. If this means the use of such an education in teaching, or in research, rather than in advising clients in private practice then the distinction may be valid. However, teaching, research and practice are so bound together that it is difficult to engage in one of these activities without, in some measure, being involved in the other two.

COMMENT:

This distinction seems to be artificial and arbitrary because the "schools: and profession both should be concerned with teaching, research and practice, particularly if a healthy and viable environment is to be enjoyed by the citizens of Ontario."

REFERENCE: ASPG REPORT, PART I, Pg. 54

2.0 EDUCATION IN ARCHITECTURE

2.1 OBSERVATION:

The ASPG proposal sees education in architecture as a process and recommends that registration be divided into three phases with an appropriate organization responsible for each stage:

a) undergraduate
   - where education is primarily the responsibility of each "school";

b) preceptorship
   - where education is the joint responsibility of the "schools" and the profession under the aegis of the proposed Architectural Education Board of Ontario (AEBO);

c) internship
   - where education is primarily the responsibility of the Ontario Association of Architects (OAA).

COMMENT:

The object of this recommendation is to clearly assign the

responsibility for each stage of the education process to a specific organization such as Carleton, Waterloo, Toronto and Ryerson for undergraduate education; the AEBO for the preceptorship programs, and the OAA for the internship period.

RECOMMENDATION: R-1

2.2 OBSERVATION:

The ASPG Report recommends the establishment of an Architectural Education Board of Ontario in order to maintain a uniform standard of education in architecture.

COMMENT:

This arrangement should have a beneficial effect upon the teaching and practice of architecture in the province. However, the terms and conditions on which it is proposed that this organization should be established and administered need to be developed in more detail before Ryerson could act on this proposal.

It appears from the Report that the AEBO would have little effect upon the operations of the Ontario Association of Architects beyond that of eliminating the need to offer the Registration Course to candidates for membership. The OAA would continue to be responsible for the work experience of the candidates for membership during the internship period. An oral professional ethics examination would be added to the

registration process.

RECOMMENDATIONS: R-3,5,6,37,59(a)

2.3 OBSERVATION:

The AEBO would be responsible for:

- the development and administration of a three-part Qualifying Examination for all persons who wish to become registered as Architects in Ontario. The three parts of the Qualifying Examination would consist of an entry filter, a set of knowledge-base examinations, and a professional practice examination.

COMMENT:

The entry filter would be used by the AEBO to determine the "eligibility" of candidates who wish to write the knowledge-base and professional practice examinations, but who are not admitted to a preceptorship program at an accredited university. It is not clear from the ASPG Report why anyone who is prepared to pay the prescribed fees and to write the knowledge-base and professional practice examinations should not be eligible to do so.

RECOMMENDATION: R-8

2.4 OBSERVATION:

The AEBO would be responsible also for:

- "assessing" the preceptorship programs in architecture at at each "school".

COMMENT:

Presumably the knowledge-base examinations would be used by the AEBO to "assess" (a) the preceptorship programs offered at the participating universities; and (b) the qualifications of candidates who have not graduated from a program "recognized" by the AEBO.

RECOMMENDATION: R-12(b)

2.5 OBSERVATION:

The AEBO would be responsible for:

- "accrediting" those universities who intend to offer preceptorship programs in architecture.

COMMENT:

This procedure appears to be acceptable in principle.

RECOMMENDATION: R-12(c)

2.6 OBSERVATION:

The AEBO would be responsible for:

- "recognizing" undergraduate programs in architecture.

COMMENT:

It appears that the only alternative to this procedure would be to directly admit all qualified persons into the Ontario Association of Architects by examination.

RECOMMENDATION: R-12(a)

2.7 OBSERVATION:

The AEBO would be responsible for:

- alternate routes to registration in Ontario.

COMMENT:

This arrangement would give the AEBO a virtual monopoly over education in architecture. It may be preferable in that circumstance to assign this responsibility to the OAA. The AEBO may act as the OAA's advisor and agent if this is deemed to be necessary. This recommendation should be studied in more depth before it can be properly considered. Perhaps the ASPG would perform this service also.

RECOMMENDATION: R-7

2.8 OBSERVATION:

The ASPG Report recommends that the membership of the AEBO should comprise the following:

- one representative from Carleton, Toronto, Waterloo and Ryerson;
- two representatives from the OAA;
- one representative appointed by OCUA; and
- one representative appointed by the Lieutenant Governor.

COMMENT:

It appears from the ASPG Proposal that both the "schools" and profession should be responsible for the success of the preceptorship program because: a) the four universities would grant degrees to successful candidates; and b) the Ontario Association of Architects, after successful completion of professional practice and ethics examinations and a period of internship, would register these graduates as Architects.

Such responsibilities should be undertaken by an organization in which the degree-granting institutions and the professional organization had equal representation.

It is essential to recognize that while the AEBO can be seen as another administrative layer, it is nevertheless a means through which the universities who are responsible for the standard of professional education, can with the OAA who is responsible for the standard of professional practice, join in the process of education and registration for architects in Ontario.

The Registration Board of the Ontario Association of Architects has nine members, so that a ten-member Architectural Education Board would not be inordinately large. This observation is particularly pertinent when it is seen that full attendance at meetings is sometimes a problem and three or four sub-committees may be necessary to do the work of the Board. Also, an even number of members may tend to prevent an "adversary" relationship from developing between the "schools" and profession.

RECOMMENDATION: R-38

3.0 ONTARIO ASSOCIATION OF SCHOOLS AND DEPARTMENTS OF ARCHITECTURE

3.1 OBSERVATION:

The ASPG proposal recommends that the Association of Schools and Departments of Architecture (OASDA) become the recognized

"discipline group" for architecture in Ontario.

COMMENT:

The key to the sucess of OASDA in the orderly development of education in architecture lies in the willingness of the "schools" to work for the benefit of society, the profession and institutions rather than exclusively toward the goals of each "school".

The primary role of OASDA would seem to be that of a motivator, co-ordinator and facilitator of plans for education in architecture that are prepared by the "schools".

It would seem to be an advantage to the "schools" to have one organization speak on matters of common concern to architects. This observation is particularly true in the current situation when it is increasingly difficult for a "discipline" to be heard even in one's own institution, let alone at COU and MCU.

A more detailed description of the duties and obligations of a "discipline group" would seem to be necessary before this recommendation could be judged. Perhaps the ASPG would undertake this task in conjunction with the work to be done in the establishment of the AEBO.

RECOMMENDATIONS: R-27,42

4.0 UNIVERSITIES

4.1 OBSERVATION:

The ASPG also recommends that the participating universities

(i.e., Carleton, Toronto, Waterloo and Ryerson):

- offer a twelve-month Master of Architecture/Preceptorship program leading to registration in Ontario.

COMMENT:

"The Master of Architecture/Preceptorship program is seen by the ASPG as a program of professional education in architecture..." (pg. 62) Such a program would be a reasonable extension of Ryerson's role. The Institute therefore would be prepared to offer such a program.

RECOMMENDATION: R-4

4.2 OBSERVATION:

The ASPG recommends that the participating universities;

- recognize contract work and consulting activities as "legitimate and equal alternatives" to other forms of academic research

COMMENT:

This recommendation is consistent with the history of Ryerson's role in education.

RECOMMENDATION: R-19

4.3 OBSERVATION:

The ASPG recommends that the participating universities:

- negotiate guidelines for full-time faculty workloads.

COMMENT:

Ryerson supports this recommendation, in principle, but recognizes that the outcome of such negotiations would be influenced by the history of collective bargaining at the Institute. Also the Department probably could not negotiate significantly different workload guidelines because the Faculty agreement is applied uniformly throughout the Institute.

RECOMMENDATION: R-22

4.4 OBSERVATION:

The ASPG recommends that the participating universities:

- accept a staff-student ratio of 1:13 as an appropriate target for this discipline.

COMMENT:

A staff-student ratio of 1:13 would be an appropriate target for this discipline. However Ryerson, like Waterloo, needs additional funding to meet this objective.

RECOMMENDATION: R-22

4.5 OBSERVATION:

The ASPG recommends that the participating universities:

- fund the undergraduate degree programs with an operating grant based upon a formula weight of two.

COMMENT:

Ryerson supports this recommendation in terms of its experience

of the relationship between income and educational expenditures.

RECOMMENDATION: R-45

4.6 OBSERVATION:

The ASPG recommends that the participating universities:

- provide funds for the development and administration of the Qualifying Examination and AEBO.

COMMENT:

It is not clear from the Report whether these funds would be provided directly to the AEBO by the Ministry or if the universities, profession, and Ministry would share these costs.

This is another matter that should be considered by the ASPG in its study of ways and means to establish the AEBO.

RECOMMENDATIONS: R-46,47

5.0 SCHOOLS AND DEPARTMENTS

5.1 OBSERVATION:

The ASPG recommends that the schools and departments:

- define a full-time faculty appointment and then list the activities, including consulting, normally engaged in by a professional faculty member.

COMMENT:

Ryerson supports these recommendations while at the same time recognizing that historical guidelines have been developed through collective bargaining at the Institute, and that this

experience would introduce some constraints into the process.

RECOMMENDATIONS: R-16,17,18

5.2 OBSERVATION:

The ASPG recommends that the schools and departments:

- describe the activities of a full-time faculty member and then develop an approrpiate formula with which to define a full-time faculty appointment.

COMMENT:

Ryerson supports this recommendation.

RECOMMENDATION: R-18

5.3 OBSERVATION:

The ASPG recommends that the schools and departments:

- develop alternative instructional formats and techniques in order to improve the quality of teaching and effective use of resources, particularly in studio courses.

COMMENT:

This work is currently being done in the Department.

RECOMMENDATION: R-20

5.4 OBSERVATION:

The ASPG recommends that the schools and departments:

- obtain the services of an educational consultant in instructional development.

COMMENT:

The intent of this recommendation fits with the emphasis that

Ryerson puts on effective teaching.

RECOMMENDATION: R-21

5.5 OBSERVATION:

The ASPG recommends that the schools and departments:

- offer graduate and undergraduate courses to the profession, industry, government and public.

COMMENT:

This recommendation is consistent with current practice at the Institute.

RECOMMENDATION: R-25

5.6 OBSERVATION:

The ASPG recommends that the schools and departments:

- organize a system of rotating leaves for full-time faculty.

COMMENT:

Ryerson supports this recommendation to the extent that it is consistent with current leave practices.

RECOMMENDATION: R-24

6.0 RYERSON

6.1 OBSERVATION:

The ASPG recommends that Ryerson:

- fund its degree programs on the same basis as that of other universities.

COMMENT:

Ryerson supports this recommendation as it forms the basis of on-going discussions with MCU and OCUA.

RECOMMENDATION: R-57

6.2 OBSERVATION:

The ASPG recommends that Ryerson:

- adopt procedures for program development of data collection, etc., that are consistent and comparable to those of the other universities.

COMMENT:

This recommendation forms part of the on-going discussions with MCU and OCUA.

RECOMMENDATION: R-57

6.3 OBSERVATION:

The ASPG recommends that Ryerson:

- improve the staff-student ratio in the programs before permitting further development.

COMMENT:

The faculty are concentrating upon the improvement of core subjects in the curriculum, although some faculty time is being directed toward developmental planning. Attempts are being made to improve the staff-student ratio.

RECOMMENDATION: R-58

6.4 OBSERVATION:

The ASPG recommends that the department:

- consider designating the undergraduate degree as a "Bachelor of Science in Architecture".

COMMENT:

Degree designations are currently being reviewed in the context of proposed revisions to the Ryerson Act.

RECOMMENDATION: R-58(c)

6.5 OBSERVATION:

The ASPG recommends that the department:

- prepare a detailed development plan.

COMMENT:

This process is currently underway.

RECOMMENDATIONS: R-26,58(d),59(c), 60

6.6 OBSERVATION:

The ASPG recommends that the department:

- discuss with the Ontario Association of Architects the registration requirements for those students who graduate before the AEBO is established.

COMMENT:

It is expected that these discussions will be initiated in the near future.

6.7 OBSERVATION:

The ASPG recommends that Ryerson:

- provide a suitable physical plant for the Department.

COMMENT:

The Institute is proceeding with this problem.

RECOMMENDATION: R-59(b)

7.0 ARCHITECTURE STUDY PLANNING GROUP

7.1 OBSERVATION:

The ASPG recommends that the present members in this group be allowed to continue their work until the AEBO is established.

COMMENT:

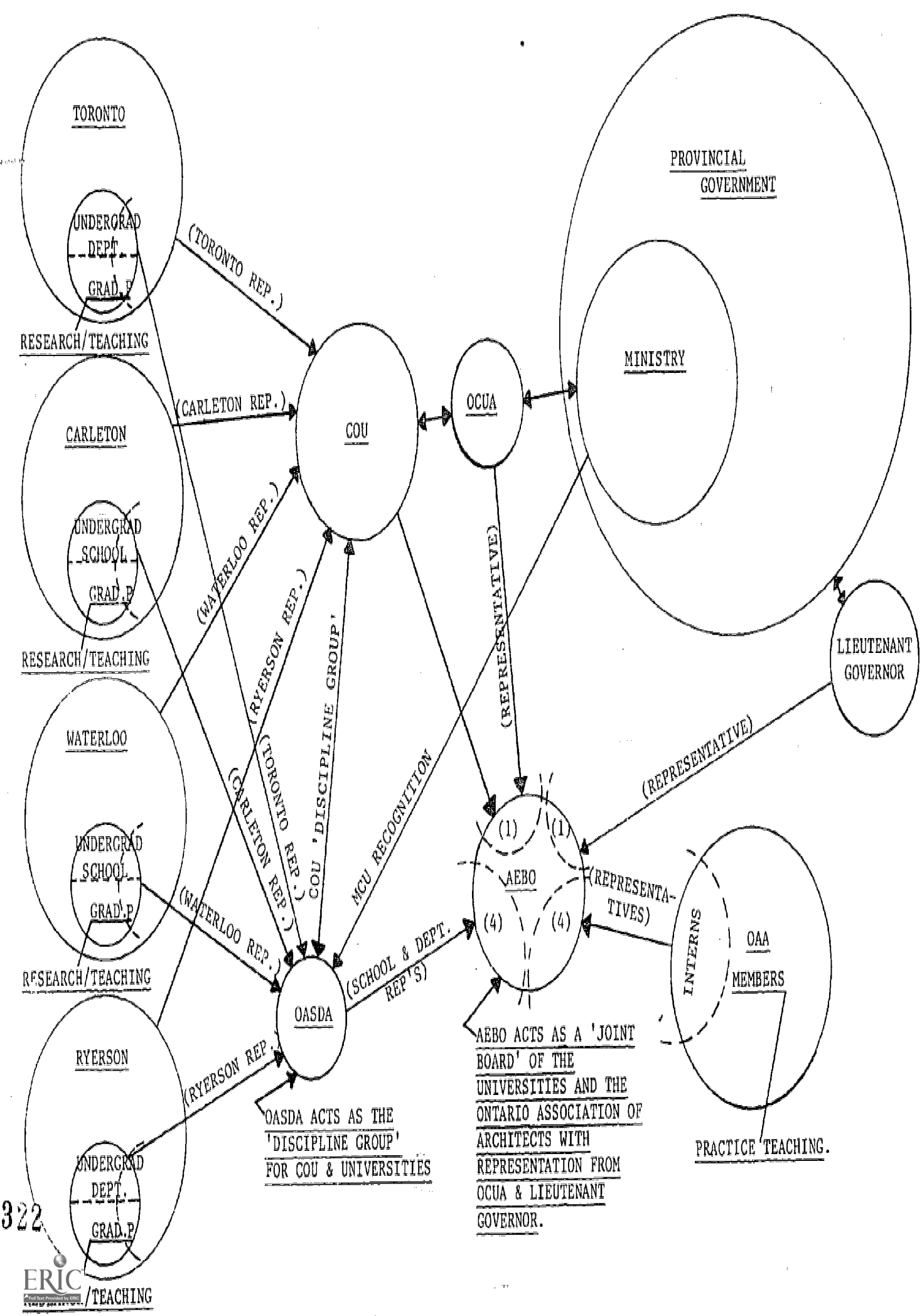
It is essential that the terms and conditions for funding and operating the AEBO be developed in more detail so that a decision to proceed with the establishment of an Architectural Education Board of Ontario can be made on the basis of a more complete understanding of the implications of this arrangement. The ASPG would seem to be the logical group to do this work.

RECOMMENDATION: R-36

APPENDIX A

The following recommendations were not commented upon:

R-2, 9, 10, 11, 13, 14, 15, 23, 28, 29, 30, 31, 32, 33, 34, 35, 39, 40, 41, 43, 44, 48, 49, 50, 51, 52, 53, 54, 55, 56, 61, 62.


TORONTO
UNDERGRAD DEPT.
GRAD. P
RESEARCH/TEACHING
CARLETON
UNDERGRAD SCHOOL
GRAD. P
RESEARCH/TEACHING
WATERLOO
UNDERGRAD SCHOOL
GRAD. P
RESEARCH/TEACHING
RYERSON
UNDERGRAD DEPT.
GRAD. P
/TEACHING
(TORONTO REP.)
(CARLETON REP.)
(WATERLOO REP.)
(RYERSON REP.)
COU
OCUA
PROVINCIAL GOVERNMENT
MINISTRY
LIEUTENANT GOVERNOR
(REPRESENTATIVE)
(REPRESENTATIVE)
'COU DISCIPLINE GROUP'
MCU RECOGNITION
(TORONTO REP.)
(CARLETON REP.)
(WATERLOO REP.)
(RYERSON REP.)
OASDA
(SCHOOL & DEPT. REP'S)
(1) (1)
AEBO
(4) (4)
(REPRESENTATIVES)
INTERNS
OAA MEMBERS
OASDA ACTS AS THE 'DISCIPLINE GROUP' FOR COU & UNIVERSITIES
AEBO ACTS AS A 'JOINT BOARD' OF THE UNIVERSITIES AND THE ONTARIO ASSOCIATION OF ARCHITECTS WITH REPRESENTATION FROM OCUA & LIEUTENANT GOVERNOR.
PRACTICE TEACHING.

Response of the University of Toronto to the Recommendations

Contained in the Report of

The Architecture Study Planning Group

OFFICE OF THE PRESIDENT
UNIVERSITY OF TORONTO
TORONTO M5S 1A1

March 12, 1976

Dr. J.B. Macdonald
Executive Director
C.O.U.
Suite 8039
130 St. George Street
Toronto, Ontario
M5S 2T4

Dear Dr. Macdonald:

Attached is the preliminary response of the University of Toronto to the Report of the Architecture Study Planning Group. This response was prepared by a Task Force composed of staff and students.

At the time when C.O.U. decided to study the architectural programmes in Ontario, the University of Toronto had just decided to dissolve the Faculty of Architecture, Urban and Regional Planning and Landscape Architecture (as outlined in the Forster memo, Appendix H of the Report of the Architecture Study Planning Group) but has delayed in making a decision on the future status of Architecture until the C.O.U. Report was completed. At present the same Task Force which prepared this report is considering the administrative future and the academic programmes of Architecture.

Yours sincerely,

John Evans

Att.

Response of the University of Toronto to the Recommendations Contained in the Report of The Architecture Study Planning Group

Before responding to the recommendations of the Architecture Study Planning Group, it would be desirable to define the appropriate role of the Architectural Education Board of Ontario (AEBO) as seen by the University of Toronto. This University supports in principle the establishing of an intermediary body such as the AEBO but envisages this Board acting only as a consulting or advising body for the universities and for the OAA and not involving itself in the direct functions of the universities (in the formal education of students) and by the OAA (in the formal certification of applicants to the profession of architecture). We would further recommend that the AEBO be established for a given period of time with a review at the end of that period.

All subsequent responses to recommendations of the ASPG Report which involve the AEBO are made with the interpretation of the role of the AEBO being that of an advisory not an executive body.

R-1

The University of Toronto agrees with parts (a) and (b) of this recommendation and with part (c) subject to this University's understanding of the role of the AEBO.

R-2

The University of Toronto agrees with this recommendation.

R-3

The University of Toronto agrees with this recommendation subject to our definition of the role of the AEBO.

R-4

The University of Toronto agrees with this recommendation with the following qualifications:

(a) MArch should be a graduate school programme;

(b) MArch should be the degree required for certification in the profession of architecture;

(c) Although the University welcomes any advice from the AEBO in establishing and administering this programme, the MArch programme should be the ultimate responsibility of the universities involved;

(d) The programme should be approximately one year's length but need not be exactly twelve months long.

R-5

The University of Toronto agrees with this recommendation.

R-6

The University of Toronto agrees with this recommendation.

R-7

The University of Toronto agrees that there should be alternate routes to certification in the profession of architecture but suggests that through consultation with the AEBO, the jurisdiction of certification should be the responsibility of the OAA. We would like to point out an implication to the universities of these alternate routes to certification, namely, possible increase in demand upon university resources by non-graduates who are required to take university courses for certification through these alternate routes.

R-8

The University of Toronto agrees with this recommendation subject to our interpretation of the following terms:

(a) The "entry filter" as it applies to the MArch programme would simply be the present procedure for admission to the graduate school, it would not imply a special qualifying examination;

(b) Our understanding of the term "knowledge base" is demonstrated competence in the profession through examinations set by the university and the AEBO.

R-9

The University of Toronto supports this recommendation.

R-10, R-11

The University of Toronto is sympathetic to the thrust of these recommendations but considers them to be outside the university's jurisdiction.

R-12

The University of Toronto suggests the following changes to this recommendation:

(a) In the first sentence of section (a) the word "criteria" be replaced by "guidelines";

(b) The assessment be conducted by ACAP with advice from the AEBO;

(c) Section (c) of the recommendation be changed to read as follows: "Determination of a process for continual "appraisal"of each of the Master of Architecture programmes for the purpose of accrediting the graduates of the programme". The University of Toronto agrees with the principle of the AEBO monitoring and co-ordinating the programmes but not of "accrediting the university to offer the programme".

R-13, R-14

The University of Toronto agrees in principle with these recommendations but is skeptical of its ability to carry them out in the present economic and regulatory climate.

R-15

The University of Toronto agrees with this recommendation.

R-16, R-17

Unfortunately, these two recommendations are contrary to the University of Toronto's policy of contract research and individual consulting. The University recognizes the value of contract research groups but would point out that there are problems associated with forming a group with the authority and control envisaged in these recommendations.

R-18

This University recognizes the need to clarify the definition of "full-time" appointment. However, the University of Toronto does have an established set of guidelines which describe the way in which professional activities should be co-ordinated with academic duties. These guidelines are as follows:

(1) That related activities by members of staff are not to be discouraged or unduly restricted since they represent a major device for disseminating the knowledge and expertise of University staff members to the community and contribute to the intellectual development of members of the academic staff;

(2) That faculty members are required to disclose the extent of such activities but are not to be burdened with excessive regulation in reporting;

(3) That disclosure be concerned primarily with the allocation of time to such activities. The purpose of disclosure is to inform the appropriate administrative officers of the extent of such activity in their divisions. This information can serve to inform them of the creative work done by their colleagues as well as to indicate possible conflicts with their other University duties;

(4) That the confidentiality of such disclosures by individuals must be respected.

The University of Toronto would welcome sharing information with other universities on the way in which professional activities are regulated with the aim of establishing regulations common to all universities.

R-19

The University of Toronto agrees with this recommendation; in fact, one criterion for granting tenure as determined by the University's Governing Council is "achievement in research and creative professional work".

R-20

The University of Toronto agrees in principle with this recommendation.

R-21

The University of Toronto recognizes the value of the services of an educational consultant, especially if he/she were well versed in instructional techniques used in laboratories, but with the present financial restrictions, the services of an educational consultant may be deemed less necessary than some academic aspect of the programme.

R-22

The University of Toronto is concerned that planning for the programme could be too dependent on rather simple indicators such as student/staff ratios. Rather, we would suggest that the universities involved share detailed information about their resources, student numbers, programme requirements, etc. Sharing of detailed information of this nature would provide a more accurate basis for comparison.

R-23

The University of Toronto is sympathetic to the thrust of this recommendation.

R-24

The University of Toronto recognizes the importance of periodical leave for faculty members but the implementation of this recommendation will be dictated by the resources of the department.

R-25

The University agrees with this recommendation and will, within the limitation of its resources, attempt to make courses available to people other than its full-time students.

R-26, R-27, R-28, R-29, R-30

The University of Toronto agrees with these recommendations.

R-31

At present the University of Toronto is considering the space needs of all sections of the University and the needs of the Department of Architecture are a part of the broader plan being developed. The University will attempt to meet the needs of the Department of Architecture; however, the University finds itself in the unfortunate position that twenty-five percent of its space is over forty years old, has never been renovated and is therefore of very poor quality. In short, there is a very serious space problem at the University of Toronto.

R-32, R-33, R-34

These recommendations are outside the jurisdiction of the University of Toronto.

R-35

The University of Toronto agrees in principle with this recommendation but would need to know the costs involved before assenting.

R-36

The University of Toronto agrees with this recommendation.

R-37

The delegation of authority to the AEBO is contrary to the role of a consulting body that the University of Toronto would envisage for the AEBO.

R-38, R-39, R-40, R-41

The University of Toronto would prefer to reserve comment on these recommendations until the role of the AEBO has been clarified.

R-42

The University of Toronto agrees with this recommendation.

R-43, R-44

These recommendations are outside the jurisdiction of the University of Toronto.

R-45

The University of Toronto agrees with this recommendation.

R-46, R-47

The University of Toronto would prefer to reserve comment on these recommendations until the role of the AEBO has been clarified.

R-48

The University recognizes the uniqueness of professional education in architecture which forms part of the rationale for the recommendation to change the Department of Architecture into a faculty with its own dean. The University is currently reviewing the role of all its professional divisions and in particular studying the most appropriate administrative arrangements for Architecture which will recognize its uniqueness. At this time, it would be premature to comment in detail on this recommendation.

There is an intensive review of the recommendations on the programme changes, but any changes will require the approval of the Academic Affairs Committee of the Governing Council. At this time, we are not in a position to make a full response to this recommendation.

University of Waterloo

Response to Study of Architecture, Part 1

Architecture Study Planning Group (ASPG)

Council of Ontario Universities, August, 1975

Introduction

STUDY OF ARCHITECTURE, PART 1, deals firstly with architecture generally in Ontario and secondly with architecture programs in individual universities and technical institutes. The first part of this response expresses agreement or disagreement with some of the recommendations on architecture generally. The second part of the response includes comment on recommendations on architecture at Waterloo specifically. The third section includes comments on recommendations which the university feels require furthur study before a precise statement can be made.

Much of the following commentary is set forth in accordance with the numbering system used in the SUMMARY AND RECOMMENDATIONS, STUDY OF ARCHITECTURE, Part 1. However in discussing architecture at Waterloo specifically, a fuller discussion of recent developments at the university is undertaken in relation to the comments and recommendations in the STUDY OF ARCHITECTURE, PART 1.

Response to General Comments on Architecture

R-1(b)

The University of Waterloo does not accept the view that work experience in the practice of architecture is "clearly under the jurisdiction of the OAA" (Ontario Association of Architects) because the university has a special co-op program in which students are employed by business and government during and as a part of their overall course of studies leading to the Bachelor of Architecture degree. This system has been accepted by OAA and the work is also accepted as part of the experience required for registration and licencing. This co-op program, like other Waterloo counterparts, has been very successful. The foregoing remarks relate to R-10.

R-2

The University agrees that the time for completion of study and registration in Architecture should be reduced but is cautious about acceptance of a standard of seven years.

R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-11, R-12, R-36, R-37, R-38, R-39, R-40, R-41, R-42, R-43, R-44, R-46, R-47

All the foregoing recommendations are related to the proposed AEBO (Architectural Education Board of Ontario) which is seen as acting

"in the area of joint responsibility on behalf of the universities and OAA". Our view is that the establishment of such an extra-university body with substantial control over architecture education is an unusual recommendation which is not in the best interests of the students, the university, or the architectural profession. The University of Waterloo is of the view that architecture should be the same as all other university programs in having its admissions and academic requirements under the control of the Faculties, Senate, and Boards of Governors. The university does not support a graduate "preceptorship" program along the lines described in the STUDY OF ARCHITECTURE, PART 1, i.e., where the field component "would be as determined by the AEBO" and the "specialized (classroom) study would be as determined by the university subject to approval and monitoring by AEBO." (Parenthese and underlining are ours).

The idea of normal or standardized undergraduate and graduate programs under the very strong influence or control of the AEBO is perceived as undesirable for several reasons. Architecture is in a state of flux in response to changing academic, environmental, and other circumstances. A search for new roles and contributions in host universities with differing resources and academic orientations seems to be particularly promising for achitecture at this time. A good architect can be produced in a number of different ways. Diversity will likely provide strength for the system.

R-13, R-14, R-15, R-20, R-21, R-22, R-24, R-25, R-26, R-27, R-28, R-29, R-30

These recommendations involve coordinated planning and management of a wide range of activities including graduate studies, a comprehensive provincial research program, publications, student exchange, resource sharing, instructional formats and techniques, expert assistance in instructional development, faculty workloads, and general and public education in architecture. The University of Waterloo strongly supports the need for innovation, monitoring, and coordination of these activities. It particularly supports greater emphasis on graduate work and research where this would involve more contact with related design-oriented disciplines in environmental studies, engineering, the physical and social sciences, and the arts. The University also supports the sometimes implicit and sometimes explicit recommendation that the coordination and planning of the aforementioned activities should be a task of the OASDA (The Ontario Association of Schools and Departments of Architecture) in association with the responsible universities, COU and other agencies. A strong professional advisory committee would also be useful here.

R-16, R-17, R-18, R-19

These recommendations on consulting should be studied by all interested universities which may, however, already have developed methods for managing consulting and research. Thus, at Waterloo, limits have

been placed on the amount of consulting that can be undertaken by any faculty member. Guidelines on the "definition" of a "full-time" appointment are set forth in university policy statements. Some consulting also is recognized as an alternative "to other forms of academic research now used as criteria for the evaluation of faculty eligibility for promotion and tenure".

R-30

The University of Waterloo accepts the LAPPIN REPORT as a guideline for space on the understanding not only that each institution "has the choice to vary the use of space within the overall allocation in order to realize its own priorities" but also that the guidelines may be conservative for any institution that enters into a full graduate and research program of the type advocated in STUDY OF ARCHITECTURE, PART 1.

R-35

The University of Waterloo supports the recommendation for a study of the Library facilities in the four universities with programs in architecture.

R-45

The University of Waterloo does not support the proposed professional MA program in Architecture, at least in its recommended form, in part

because of the high level of control vested in the AEBO and partly because of an interest in alternative forms of graduate education which require study by the School at Waterloo in ensuing months.

Response to Recommendations on Architecture at Waterloo

R-51, R-52, R-53

These recommendations are aimed at improving faculty numbers and space and operating conditions generally in architecture at Waterloo. The recommendations also pertain to the then expected appointment of a new Director, temporary space, a research program development, and to ongoing and future management of the School. The following remarks are related to these matters as well as to earlier recommendations on architecture generally, as set forth in the STUDY OF ARCHITECTURE, PART 1.

At the time of the formation of the Architecture Study Planning Group the Waterloo School of Architecture had 14.5 faculty and a budget allocation for "per diem" appointments equal to 1.5 full-time equivalents at the assistant professor level of funding. Overall then the School had 16 full-time equivalent faculty.

Subsequently in May, 1975, prior to release of the study of Architecture Report, the Faculty of Environmental Studies (FES)

provided additional funding for one full-time appointment and for "per diem" appointments almost equivalent to another full-time appointment at the assistant professor level. The Faculty has also provided funding for a joint appointment with the Faculty of Arts. The School of Architecture was thus funded to the level of more than 18 full-time equivalent faculty.

In the course of 1976-77 budget planning FES and the University have agreed to support 2 more full-time appointments for a complement of more than 20 full-time equivalent faculty, producing a faculty/student ratio of 1:13, the figure recommended in the Report of the Architecture Study Planning Group. In reaching these arrangements with the School, the Faculty has been interested in a greater contribution from Architecture to its other programs and to those of the university at large. The School has agreed to contribute to the FES summer program in continuing education by offering 8 half credit courses in the broad field of architecture. One of these courses (An Introduction to the Study of Architecture) is intended to serve secondary school students and others considering undertaking formal studies in architecture.

The School of Architecture and faculty representatives have also met formally and informally with Faculty of Engineering members to discuss possible cooperative work in the areas of building design and systems

design. Recently the Director of the School met with representatives of the Guelph University School of Landscape Architecture, to discuss the possibility of shared design programs and courses in building construction.

Professor F. Watts has agreed to accept re-appointment as Director of the School for a three-year term beginning July 1, 1976. The appointment is based on the understanding that the School, the Faculty, and the University will interact more completely in future, although such interaction is limited by the housing of the School in a relatively isolated off-campus situation.

Shortage of space is a very serious problem for Architecture, which is now housed in a leased off-campus warehouse-office building. The Faculty cannot contribute much to the solution of the space problem. All teaching units in the Faculty have less space inventory than entitlement and the Faculty as a whole has the greatest deficit of any of the Faculties of the University of Waterloo. As a result of the space shortage Architecture has been forced to change its regular first year teaching procedures drastically for fall term 1975-76. First-year students in the School are undertaking studio work on a shift basis so as to be able to use the severely limited physical resources of the School during the peak fall demand period.

The present shift arrangements place extraordinary demands on instructors. In effect the shortage in space (capital) is forcing higher long-term operational costs. No space is available for research, large-scale creative design, or graduate teaching in Architecture.

Solutions fall into the long-term and short-term categories. Current planning indicates temporary space of approximately 8,000 square feet can be provided for architecture through rental of newly constructed space on the present off-campus site.

In the long term, the only acceptable academic and professional solution is the provision of new space on-campus. Preferably this space should provide for a high level of academic interchange between the School of Architecture, other units of FES, and other departments in the university. A University of Waterloo Design Centre is an attractive potential model which could provide special academic, professional, and social contributions to higher education in Ontario. The fundamental problem in effecting new construction is lack of funds. The need for space in architecture and related disciplines is sufficient for the university to make especially vigorous representations for financing to government.

Matters Requiring Further Study

The FES and the University are providing increased financial and general support for Architecture in the belief that Architecture occupies a central role in the development of a coordinated environmental studies program at Waterloo. Architecture has established a planning committee chaired by the new Associate Director, and consisting of the Director, faculty from its four theme areas, and student representatives. The major areas to which this committee is now directing its attention are the School's position within the FES, its affiliation with the university at large, and the essential or "core" elements of its studies in architecture. A year will probably be required for the development of recommendations on these matters. The School's planning is being conducted along with a review of the FES academic programs and procedures. A process for planning is developing which should be able to accommodate and provide for both the professional and service contributions of the School of Architecture to the Faculty, University, and society.

January 28, 1976

V

SUPPLEMENTARY COMMENTS OF THE ARCHITECTURE STUDY PLANNING GROUP

COUNCIL OF ONTARIO UNIVERSITIES
CONSEIL DES UNIVERSITÉS DE L'ONTARIO

130 ST. GEORGE STREET, SUITE 8039
TORONTO, ONTARIO M5S 2T4
(416) 979-2165

February 23, 1976.

Dean G. Carrothers,
Faculty of Environmental Studies,
York University,
4700 Keele Street,
Downsview, Ontario

Dear Dean Carrothers,

At the January 30 meeting of COU, you expressed a willingness to convene the Architecture Study Planning Group to consider the university comments on the Architecture Study, and to report furthur to COU. Official comments have been received from Ryerson, and draft comments from Carleton, Toronto and Waterloo. I enclose these, along with a summary.

Most of the comments centre on the M. Arch proposal, particularly on the role of the proposed Architecture Education Board of Ontario. Since there seems to be general opposition to the proposed authority of the AEBO, it would be useful if the study group would consider the effects of modifying this on the thrust of the report.

Another general theme in the comments is the apparent uniformity which might be imposed on the pattern of architecture education. Again, some comment on this would be useful.

So that the Council can consider the report again at its April meeting, we would be grateful to have by March 15 any further comments the Architecture Study Planning Group wishes to make.

Yours sincerely,

G. Grant Clarke
Secretary

GGC:jf
Encl.

Office of the Dean

YORK UNIVERSITY

FACULTY OF ENVIRONMENTAL STUDIES

4700 KEELE STREET, DOWNSVIEW, ONTARIO, CANADA

19 March 1976

Mr. G. Grant Clarke, Secretary
Council of Ontario Universities
130 St. George Street, Suite 8039
Toronto, Ontario M5S 2T4

Dear Mr. Clarke:

In response to your letter of February 23, 1976, the Architecture Study Planning Group has met twice to consider the preliminary responses of the universities to the ASPG Report of August 1975.

With this letter are further comments by the ASPG in light of these responses, for consideration by the Council at its meeting of April 2, 1976.

We understand that the Ontario Association of Architects will be providing its response sometime in April 1976 and that the Council may wish the ASPG to respond again at that time.

In the meantime, if any of the involved universities or the OAA wishes to meet with the ASPG to discuss the various issues raised by the Report, the members of the ASPG would be happy to oblige, either as a group or individually, as the occasion might warrant.

Yours sincerely,

Gerald A.P. Carrothers
Chairman, Architecture Study Planning Group
Council of Ontario Universities

cc: Brian Parks, Executive Director, OAA

gapc/c

STUDY OF ARCHITECTURE EDUCATION

SUPPLEMENTARY COMMENTS
OF THE ARCHITECURE STUDY PLANNING GROUP
FOLLOWING THE PRELIMINARY RESPONSES
OF THE UNIVERSITIES
TO THE ASPG REPORT OF AUGUST 1975

Council of Ontario Universities
130 St. George Street, Suite 8039
Toronto, Ontario M5S 2T4

18 March 1976

The ASPG has studied the preliminary responses of the universities to the August 1975 Report and has concluded that many of the concerns result from misunderstanding of what is said in the Report or from misperception of the intent -- there are some real differences of opinion.

In presenting a proposed framework for architectural education in Ontario, it was not the intent of the ASPG (nor would it have been possible with the time and resources available) to present a fully detailed program. Rather, it was the intent to present a development program in broad outline, with the view that the universities on the one hand, and the OAA on the other, would engage in fleshing out courses of action, subject to all of the normal processes of review, evaluation and approval.

The following comments are offered in the hope of clarifying some of the issues raised by the universities in their responses to the Report of the ASPG.

PURPOSE AND LEVEL OF STUDY

The ASPG believes that it is essential to distinguish between the study of architecture for its own sake and study that is also for the purpose of entry into professional practice. The Group believes that the first level of study of the subject of architecture should be for its own sake and should occur at the undergraduate university level. For the individual student, such study might conclude with that level or it might serve as preparation for advanced study of the subject — for its own sake or with the additional sake of entry into professional practice. The distinction at the advanced level is reflected in the two streams of study which, for purposes of clarity in the Report, the ASPG designated respectively as Master of Architecture (Academic) and Master of Architecture (Professional).

The Group believes that it makes sense that the degrees earned at this graduate level of study should be designated as masters degrees. However, the Group is equally convinced that the degree designation is not the

essential issue. Universities should be free to choose the designation that serves the purposes of the university. A bachelor's degree or professional diploma designation would not necessarily in itself adversely compromise the program. What is essential is that the advanced professional study of architecture be functionally, if not administratively, at the graduate level and be thoroughly professional in both the academic and practice senses of that term.

Using more general terms, what the Group has designated as the Master of Architecture (Professional) program might better be referred to as the 'professional stream' and what the Group has designated as the Master of Architecture (Academic) might be better referred to as the 'academic stream'.

STANDARDS AND UNIFORMITY

In proposing the clear separation of responsibility for the various aspects of architectural education, the ASPG also recommends and supports increased diversity and complementarity in the undergraduate programs. The Group does not believe that the 'recognition' of the undergraduate degrees in architecture for the purpose of entry into the 'professional stream' at the graduate level should lead to increased standardization and uniformity at the undergraduate level. On the contrary, the Group believes that the separation recommended would alleviate existing pressures for uniformity, illustrated by some vocal elements of the practicing profession which call for direct influence in the undergraduate architectural programs by the practicing profession.

At the graduate level in the 'academic stream' there is clearly no question that unique and diverse programs should emerge.

At the graduate level in the 'professional stream', however, there is indeed a need for a common curriculum framework to respond to the obligation to the public to ensure that all those entering the practicing profession have command of the essential subject knowledge, skills, and professional synthesis required for the practice of architecture. This is not to conclude, however, that the result would be uniformity of programs.

The proposed preceptorship program is intended to provide one (albeit essential) of two components of the common curriculum framework. The ASPG has proposed that the preceptorship component might constitute as much as 75% of the overall time requirements in the 'professional stream'. The precise proportion to be represented by the preceptorship component is expected to vary among universities and among students, depending upon the particular needs and circumstances, and as determined by the individual university in consultation with the AEBO. Within the common framework of the preceptorship requirements, the particular nature of the experience will also vary, in accord with the individual degree requirements. At the same time, the common preceptorship framework will provide specialized educational resources on a provincial basis and provide access that could not otherwise be available.

The depiction of the preceptorship component presented in the Report of August 1975 is intended to convey its essential character as an integrated field and classroom experience — it is not intended to provide specifications of the program. The detailed design of the preceptorship component represents a very substantial challenge which can only be addressed by those charged with carrying it out.

The other component of the 'professional stream' is intended to provide specialized opportunities and to establish the unique style and philosophical basis of each university's program, given the constraints of the common objective of study for entry into professional practice.

JURISDICTIONS

The ASPG is completely and unalterably convinced that the future of the profession of architecture in Ontario depends upon the full and public-spirited cooperation of the practicing component of the profession and the teaching component of the profession, in discovering the proper roles to be played by the institutions involved. The existing positions of partisanship and confrontation will not do. The universities need to recognize that a seemingly intransigent stance of educational autonomy is taken at face value by the practicing profession, giving credence to the persistent image of academic unreality; the OAA needs to recognize that a small and vociferous carping element does nothing to enhance the credibility of the profession in the eyes of the universities and the

public.

The universities and the OAA must be prepared openly to acknowledge that each has a legitimate interest in the other's affairs, if architectural education and practice are to serve their public purposes. Moreover, each must acknowledge and trust the qualifications and competences of the other in its own sphere of concern.

Obviously, the universities and the OAA are already involved in each other's affairs. The present institutional mechanisms of interaction consist of representation by the OAA on some university bodies, some representation by the universities on the Registration Board of the OAA and, most significantly, the formal accreditation of undergraduate architecture programs by the OAA with the acceptance of the universities. These mechanisms are historical and anachronistic and do not foster cooperation between the universities and the OAA in resolving matters of mutual concern.

A precondition for resolving jurisdictional issues in architectural education is the willingness of the universities and the OAA to work together. In the belief that this can be done, the ASPG has attempted to identify the appropriate locus of mutual concern. The Group believes that locus to be the 'professional stream' of graduate architectural education. The Group believes that the universities should properly have exclusive jurisdiction over programs for the study of architecture as a subject. The Group believes that the OAA should properly have exclusive jurisdiction over the work experience it requires to demonstrate competence to practice architecture. It is, of course, quite possible that an activity may serve both interests: for example, work experience required in an undergraduate university program may also be accepted by the OAA for its purposes, but the jurisdictions are clearly independent.

In the overlapping jurisdiction of professional education, the ASPG believes that an instrument such as the AEBO, recognized by the involved universities as representing their interests and recognized by the OAA as representing its interests, is a credible opportunity to achieve

cooperative action between the universities and the OAA. The discussion of the AEBO in the ASPG Report is intended to illustrate the essential requirements of such an instrument: it must be established by open mutual agreement of the universities and the OAA; its composition must be acceptable to both the universities and the OAA, but must also represent a third-party 'public' interest; it must have the authority to carry out its responsibilities, calling for delegation of authority by the universities and the OAA; the array of responsibilities and authority must be the result of negotiation and agreement, on public record, between the universities and the OAA. It is reasonable to expect that the responsibilities and authority might evolve over time from a relatively modest beginning — but a beginning there surely must be.

The suggested composition of the AEBO is intended to be illustrative. There are many alternative possibilities that would satisfy the need for representation of the universities, the OAA and the public-at-large. Here again, negotiation and agreement are called for.

The essential condition is that the universities and the OAA be willing to join together in discussion and negotiation to evolve a mutually agreeable relationship. If either chooses to ignore the other, the profession of architecture, the universities and the public-at-large will be among the losers.

ACCREDITATION

The issues involved in the various forms of 'accreditation' are, of course, essentially jurisdictional. However, the ASPG feels that a separate note of clarification might be helpful.

One of the objects of the recommendations of the ASPG is to identify those points in the process of formal advancement into the practice of architecture where it is considered necessary for judgements to be made of the qualifications of the individual student to proceed to the next step in the process. Such judgements can be made by direct examination or by acceptance of qualifications obtained under another jurisdiction. These judgements are now made by the OAA. The ASPG suggests that the responsibility for these judgements be shared by the universities through

the instrument of the AEBO. The issue is not whether such judgments will be made, but rather how they will be made: the OAA is now obliged to make these judgements. The ASPG suggests that the delegation of this authority to the AEBO would be to the benefit of both the universities and the OAA.

The 'recognition' by the AEBO of undergraduate degrees in architecture is intended to provide for exemption from direct examination to determine knowledge of the subject matter of architecture as the basis for professional education for the practice of architecture. This process does not involve the approval of programs of study, but only the acceptance of degrees as prima facie evidence of qualification.

The 'entry filter' into the Qualifying Examinations is intended to determine that the applicant has the equivalent of a 'recognized' undergraduate degree in the subject of architecture (which may be determined by direct examination), one purpose being to prevent frivolous application for the Qualifying Examination.

The purpose of 'accrediting' a university to offer the 'professional stream' of graduate education in architecture is to ensure that the resources are, in fact, available to offer the program that will exempt the student from the Qualifying Examination.

The purpose of monitoring and approving the graduate programs in the 'professional stream' is to provide for the actual exemption of the student from the Qualifying Examination. A university could well decline to take the guidance of the AEBO on its curriculum and accept the consequence of at least some further examination of its students under the Qualifying Examination requirement.

In any event, the AEBO (and the OAA) would not have a voice in the judgements for award of the degrees involved - that would remain the exclusive right of the universities.

TYPOGRAPHICAL ERROR

The ASPG would draw attention to a typographical error in its Report of August 1975, which coincidentally highlights matters at issue. As published, paragraph one on page 59 reads:

> In short, the ASPG is recommending the replacement of what is now seen essentially as an instantaneous act of entry into the profession, encumbered by undue confusion of the purposes of extended formal educational experience leading up to that moment, with the purposes of intelligent future intervention in the practising world. The proposed replacement is an explicit education/practice experience during an explicit period of one calendar year for which the responsibility is shared by the educators and the practitioners, which would be preceded by an educational learning experience determined by the practitioners, all of which is intended adequately to prepare the individual for entry into the larger profession of architecture. As proposed by the ASPG, the requirements would constitute new forms of experience in different proportions within a shorter time-frame than presently exists. (See Figure C.)

The paragraph should read as follows:

> In short, the ASPG is recommending the replacement of what is now seen essentially as an instantaneous act of entry into the profession, encumbered by undue confusion of the purposes of extended formal educational experience leading up to that moment with the purposes of intelligent future intervention in the practising world. The proposed replacement is an explicit education/practice experience during an explicit period of one calendar year for which the responsibility is shared by the educators and the practitioners, which would be preceded by an educational learning experience determined by the educators, and which would be followed by a practice learning experience determined by the practitioners, all of which is intended adequately to prepare the individual for entry into the larger profession of architecture. As proposed by the ASPG, the requirements would constitute new forms of experience in different proportions within a shorter time-frame than presently exists. (See Figure C.)

The difference is substantive.

VI

COMMENTS BY ONTARIO COUNCIL ON GRADUATE STUDIES

Comments of OCGS to COU on the

Report of the Architecture Study Planning Group

The central recommendation in this report with respect to implications for graduate studies is R-4:

R-4 the participating universities (as in R-3) offer a 12-month professional Master of Architecture programme, consisting of:

(a) a common "preceptorship programme" of integrated field and classroom experience, and

(b) specialized study whose nature would vary from university to university in accord with the particular resources and interests of the university in which the student is enrolled. The "preceptorship" would be as determined by the AEBO, the specialized study would be as determined by the university subject to approval and monitoring by the AEBO.

OCGS has first addressed itself to the question of whether the proposed programme should indeed be at the graduate level. It is noted (p. 62) that the length of the programme would be 12 months, and that its two components would be: (1) the "preceptorship" programme of integrated field and classroom experience (three-quarters of the overall time) and (2) specialized study of a nature varying according to the university (one-quarter of the time). Although it appears (p. 63) that some theoretical work would be

included in the "preceptorship" component, OCGS has distinct reservations about what appears to be a proposal for a Master's programme that would include a much lower level of specialized theory than commonly exists in other disciplines. For this reason, OCGS believes that the programme should not be offered at the Master's level unless an appreciably larger specialized study component is introduced, with the effect of lengthening the time required beyond 12 months.

If the programme is offered at the Master's level, the view of OCGS is that the discipline must be subjected to assessment, the nature of which would be at the discretion of ACAP, and that programmes of individual universities must be subjected to appraisal by the Appraisals Committee of OCGS. We note precedents for such procedures in other professional areas: library science; planning and environmental studies; administration, business and management science.

OCGS concurs in the reservations widely expressed by the responding universities about the role of the proposed Architecture Education Board of Ontario, and believes that granting of executive authority to such a body would lead to unwarranted incursions of the profession into areas of responsibility which should be reserved to the universities. We also agree that there would be a risk of imposing an

undesirable uniformity on the programmes at different institutions, and fear that, at worst, the effect could be to encourage conformity and discourage innovation. At least insofar as its activities would affect graduate programmes, OCGS believes that AEBO's role should be an advisory one only, and in particular would recommend that it have no other function with respect to the processes of assessment and appraisal.

J. H. Bater, University of Waterloo

S. A. Brown, Trent University
(chairman)

H. W. Smith, University of Toronto

March 23, 1976

VII

RESPONSE FROM THE ONTARIO ASSOCIATION OF ARCHITECTS

ntario Association of Architects
Park Road
oronto, Ontario M4W 2N5
16) 929-0623

fice of the president

OAA

May 6th, 1976.

Mr. Bertrand Hansen,
Research Director,
Council of Ontario Universities,
130 St. George Street, Suite 8039,
TORONTO, Ontario. M5S 2T4.

Dear Mr. Hansen:

The Ontario Association of Architects has now completed its evaluation of the Report of the Architectural Study Planning Group (ASPG) of the Council of Ontario Universities. This comprehensive and thoughtful document has raised many critical issues which we believe to be of great importance since decisions made now could fundamentally affect the future of professional education and practice in this Province.

In September 1975, the Council of this Association established a Task Force under the chairmanship of R. Stewart Smith, a past president, to consider the ASPG Report. This Task Force was composed of past and present members of Council, the Registration Board and the Professional Education Committee. It submitted an Interim Report prior to the November 1975 meeting of Council, and a Final Report on March 24, 1976: this has now been considered and discussed by Council and the Registration Board.

To comment in detail on the ASPG Report and the 62 recommendations it contains would be beyond the scope of this letter, but we do wish to express our strong endorsement of a few basic issues which the Report brought out:

1. It is imperative that closer liaison and co-operation between the schools and the profession be established and fostered.

2. It is imperative that those who graduate with professional degrees from Ontario Universities are well prepared for entry to a practising professional career in the Province, and have competent command of essential skills, knowledge and experience to offer in service to their clients, the public in Ontario.

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3. It is vital that the present inadequate capacity of the Ontario schools of architecture (a principal motivation for establishing the ASPG) be augmented rapidly: we firmly support upgrading the Ryerson degree programmes to achieve this aim, but strongly recommend that its course in architectural technology also be maintained.

4. It is desirable that the minimum total time requirement to registration as an architect in Ontario be reduced; however, any reduction which can be achieved must not significantly diminish the period of work experience which has been found to be necessary by the Registration Board.

5. It is desirable that the OAA phase out much of the present Registration Course: However, this cannot be done until new provision for teaching of these courses is set up to serve all applicants for registration, and not confined to graduates from Ontario universities.

This Association is also becoming increasingly concerned with the importance of encouraging a greater public awareness of the built environment in an era of increasingly rapid urbanization. While this matter is peripheral to the practising profession, it parallels certain issues raised by the ASPG with respect to undergraduate studies and some types of fundamental research.

These concerns imply inter-related additional funding requirements which will have to be met principally by the public purse. In this context, we would urge that a co-ordinated joint approach should be made by the OAA and COU to the Ministry of Colleges and Universities.

While there are a few areas in our Task Force Report which are not fully supported by our Association, in the light of the study and evaluation which we have given to the ASPG proposals, and in the interests of the profession, the universities, and the public-at-large, we would now propose that the OAA and the COU establish a joint committee at an early date. This joint committee should give further study to the recommendations contained in the ASPG Report, and investigate means of implementation of these recommendations found acceptable to both parties.

In making this proposal, we would specifically recommend as follows:

1. The joint committee should be composed of six members; three to be appointed by and from the Universities having schools of architecture, and three to be appointed by the OAA; all six people should be registered in the OAA.

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2. The joint committee should be charged with the responsibility of conducting initial negotiations with the Universities and the OAA, and reporting regularly for a given period of time. A joint COU-OAA review should be conducted at the end of that time.

3. Terms of reference for the joint committee should include, inter alia,

   - ways and means of determining administrative arrangements, costs, etc., for a proposed education board and also to determine the status of such board.

   - procedures for on-going accreditation of professional programmes at the architectural schools.

   - areas of input and influence of the OAA on the basic curricula in all years at the schools.

   - feasibility of the schools fulfilling a role in continuing professional education and development.

   - updating the OAA's Performance Criteria for architects.

To assist in its task, we will provide the joint committee with our Task Force Report and such other briefs and comments as have been received within this Association: we would assume that the Universities would similarly make appropriate material available.

We trust that the COU will agree with our proposals, and look forward to the establishment of an effective joint committee.

For your information, Messrs. Abram and Ridsdale have completed their assignment as the Association's representatives on the Architectural Study Planning Group of the COU. It is the Association's policy to spread the heavy volunteer work load amongst its members and we will be appointing two new members in the very near future. Could you please advise me of any meeting dates you have established for the future.

Yours very truly,

Irving D. Boigon,
President.